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FINANCIAL INCENTIVES AND MEDICAL PRACTICE:
Evidence from Ontario on the Effect of Changes in Physician Fees on Medical Care Utilization

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FINANCIAL INCENTIVES AND MEDICAL PRACTICE:

Evidence from Ontario on the Effect of Changes in Physician Fees On Medical Care Utilization

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I. INTRODUCTION

As governments of most industrialized nations struggle to constrain the rate of growth of health care expenditures, payments to one of the key players in the system - physicians - are coming under increasing scrutiny. Policy makers are exploring options for increasing control over payments to physicians, and the fixed fee schedule has been identified as a potential tool for achieving this objective. In its 1989 Annual Report to Congress, the Physician Payment Review Commission (PPRC) recommended that a fee schedule, based on a resource-based relative-value scale (RBRVS), be introduced for the payment of physicians under the Medicare Program. If implemented, the new fee schedule will considerably alter the fees received for particular services (Physician Payment Review Commission, 1989). On average, fees for evaluation and management services will increase relative to the fees for invasive and imaging procedures (Physician Payment Review Commission, 1989; Hsiao et al., 1988b).

Understanding how and to what degree physicians will respond to the incentives created by revisions to fee schedules is crucial for predicting the effects of such changes on the utilization of physician services and, ultimately, on medical care expenditures. Theoretical models of physician behavior do not provide unambiguous predictions of how physicians will respond to fee changes. Both inverse and positive associations between fees and utilization can be explained within demand-inducement and neo-classical models. And currently there is little empirical evidence upon which to base a prediction of the likely direction or magnitude of a response to fee changes. XY

The purpose of this analysis is to explore the effect of changes in physician fees on the utilization of medical care services. The three specific objectives of the research are: XX

(1) to analyze the effects of changes in the fees paid for specific procedures on the utilization of those procedures;

(2) to assess the role of fees in determining medical care utilization relative to other demand and supply factors; and,

(3) to explore the potential of a fee schedule as a policy tool for affecting the utilization of medical care services.

To do this ~~we analyzed~~ the impact of fee changes on utilization [are analyzed] for a set of 28 procedures billed by physicians in Ontario, Canada under the Ontario Health Insurance Plan (OHIP). The unit of analysis is an individual procedure and the impact of fee changes is assessed by regressing measures of the utilization of each procedure on measures of the fee for the procedure as well as other independent variables that control for demand and supply factors. Specifically, we analyze the relationship between utilization and two alternative measures of fees: the relative fee (i.e., the fee for the procedure relative to the fees for other procedures) and the real (inflation-adjusted) fee received for providing the service. XX

Though the Canadian health care system is similar to the U.S. system in many important respects, e.g., physicians in Canada practice privately, determine the quantities and mix of services they provide, and are paid primarily on a fee-for-service basis, there are distinctive features to the Canadian system. In Canada, health care is provided under a universal, comprehensive, publicly-funded health insurance scheme. (Details of the Canadian system and comparisons with the U.S. system can be found in Evans et al., 1989; Vayda and Deber, 1984; Evans, 1986. A summary of physician payment in Ontario is provided in Appendix A.) These features offer a unique opportunity to explore the implications of fee changes. For the past seventeen years, Canadians have faced virtually no out-of-pocket charges for medical services. [Although extra-billing, or billing above the OHIP-approved fee, was permitted until 1986, it has been estimated that it affected fewer than 5% of all claims (Heiber and Deber, 1987).] Patients, therefore, are generally unaware of the price of services. Consequently, patients' behavior (i.e., demand) is unlikely to have been affected by changes in the fee schedule; physicians alone have felt the impact of the fee changes. A utilization response can therefore be interpreted as being primarily, if not exclusively, supplier-driven.

In Canada, The existence of a single payer, the government, affords greater opportunity to control expenditures on physician services via the fee schedule. Because private insurance is nonexistent, physicians cannot circumvent a change in OHIP fees by providing services under a different fee schedule (e.g., a third party insurer's). As a result, the full utilization impact of a fee change can be identified.

Evidence from Ontario, then, can be useful for U.S. policy makers in their efforts to determine the likely effects of implementing a fixed fee schedule on the utilization of physician services. It should be acknowledged, however, that the data used for this study are limited in their ability to answer the study questions and that inferences for the U.S. system must be made with caution. There are two major reasons for this:

(1) The analysis examines data from the province of Ontario only. The generalizability of the results may be limited by the extent to which physicians in other jurisdictions face similar institutional constraints (e.g., physician to hospital bed ratios, a single payor).

(2) The time series nature of the data make it difficult to isolate changes in fees over time from other factors that also change over time and that likely affect utilization (e.g., medical technology). Although we employ multiple regression analysis to control for other determinants of utilization, it can do so completely only insofar as we can accurately capture the effects of these other factors.

In addition to the empirical analyses,

II. PHYSICIAN RESPONSES TO FEE CHANGES

Four important studies are analyzed to

Most of the evidence regarding responses to fee changes concerns how physicians react to across-the-board changes in fees -- that is, to an equal percentage change in the dollar value of all fees. Though this evidence is not directly applicable to the question at hand, it provides some insights into physicians' reactions to economic incentives and we briefly review four of the more important of these studies (see Gabel and Rice, 1985, for a review). ~~We then discuss some~~ And other studies that examined selected aspects of how changes in the fee(s) for one procedure (or set of procedures) affect utilization are discussed.

A. Across-the-Board Changes in Fees

Holahan and Scanlon (1979) and Mitchell et al. (1989) both examined the effect of fee controls that were implemented to moderate or constrain the rate of growth in fees in the U.S. Medicare program. During the period of wage and price controls in the early 1970s, which lasted from 1971-1974 under the Medicare program, payment rates for individual services were limited to a 2.5% annual increase. In their analysis of the reaction of California physicians to the fee controls, Holahan and Scanlon found that total physician payments rose by 10-13% per year and that the quantity and intensity of services provided to Medicare beneficiaries increased up to 10% per year. When the controls were lifted in 1975 the quantity of services provided leveled-off (and actually declined 9% for general practitioners), but physicians raised their prices by an average of 23%. They ~~authors~~ concluded that: "...physicians thwarted any intent to limit expenditures by (1) changing to a more complex service mix and (2) increasing the number of services provided."

More recently, Mitchell et al. (1989) examined changes in the utilization of physician services during the 1984-86 Medicare fee freeze. They estimated that during the period of the fee freeze expenditures per beneficiary increased 29.5%, the result of both an increase in the number and complexity of services provided. Per beneficiary payments for surgery, anesthesia, radiology and special tests increased faster than the average rate of increase for all services, and increased payments for surgical services accounted for the largest proportion of the 29.5% increase. The increase in surgical expenditures was driven primarily by increased utilization of diagnostic surgery. But because a number of other events occurred during the period of the fee freeze, including the introduction of prospective payment for in-hospital care and a change in the regulations under which physicians billed for laboratory tests, it was not possible to isolate what, if any, part of the increased servicing was attributable to a physician response to the freeze.

The third study was conducted using data from the Medicare program in Colorado and examined the impact of a "natural experiment" which resulted from an administrative change implemented by the Medicare carrier (Rice, 1983; 1984). In 1977, the method for calculating Medicare prevailing charges was changed, which led to substantial increases in payments for non-urban physicians and a virtual freeze for those in urban areas. The results indicated that both the complexity of medical and surgical services and the quantity of laboratory tests and surgery provided by urban physicians increased relative to that of rural physicians. The results did not indicate, however, whether the increase occurred because urban physicians increased the quantity and complexity of the services they provided or rural physicians decreased the quantity and complexity of services provided, or both.

The final study examined the Canadian experience with controlling the absolute level of fees (Barer et al., 1988). Over the years, some provinces -- particularly Quebec -- have been less generous than others in raising physician fees. In general, the study found that those provinces that were less generous in raising physician fees over time were more successful at controlling expenditure inflation. The authors concluded that, over the long-run, even though physicians tended to react to across-the-board fee constraints by providing more services, typically they did not "induce" enough utilization to offset fully the income effects of tight controls over fees.

Together these studies provide evidence that physicians both have the ability to and, in some situations, do react to constraints in the overall level of fees by increasing the utilization of services. In the short-run, a policy of controlling the rate of increase in fees in an effort to control expenditures is compromised by a corresponding quantity response. (One cannot conclude that fee controls were totally unsuccessful because it is unclear what expenditures would have been in the absence of the controls.) Controls may be more successful if pressure is put on fees repeatedly over a number of years, as has been done in Canada, because physicians are less able to induce sustained utilization responses.

B. Changes in the Relative Value of Fees Among Procedures

The literature on the effect of changes in relative fees on utilization is confined mainly to conceptual models rather than empirical studies. Much has been written, for example, on the inherent financial incentives of a fee-for-service system, and the extent to which physicians are able to (or do) capitalize on those incentives. (See, for example, Hadley et al., 1979; Stano, 1987.) Some researchers have posited that physicians are likely to react to changes in relative fees (Petersdorf, 1976; Seldin, 1976), although empirical evidence has not been forthcoming. Schroeder and Showstack (1978) developed a model of a hypothetical physician practice to examine the extent to which financial incentives alter the mix of services between medical procedures and laboratory tests. They concluded that relative fees have the potential to affect service mix significantly because physicians can increase their incomes substantially through the provision of laboratory tests. Other authors have also cited the profitability of laboratory tests as a possible explanation for the high frequency of their use relative to other procedures (Epstein et al., 1984; Danzon et al., 1984; Eisenberg et al., 1987).

Two studies have examined the simple correlation between fee changes and use of a procedure. The first compared changes in the number of cataract extractions performed on U.S. Medicare beneficiaries with changes in the fee for the procedure, and found a strong positive correlation (Taylor, 1981). The second, from the Canadian province of Nova Scotia, examined changes in the practice patterns of physicians following increases in fees for three procedures: office visits (including a regional exam); psychiatric services; and home visits (Nova Scotia, undated). The study found that, as a percentage of all services billed, the utilization of these three procedures increased after the relative fees for them increased.

Therefore, although there appears to be a general perception that physicians do respond to changes (or differences) in relative fees (at least at the margin), there is little solid evidence to substantiate this perception. Furthermore, all the studies discussed ~~above~~ were unable to distinguish whether the utilization response was demand- or supply-driven.

III. MODELLING THE UTILIZATION OF PHYSICIAN SERVICES

The effect of fees on utilization cannot be analyzed in isolation; one must begin with a conceptualization of the utilization process and then examine the role of fees within that process. At a recent workshop[1] held in Hamilton, Ontario a model of utilization was conceived which reflects the specific characteristics of the Canadian medical care system (e.g., zero price at point-of-service, universal coverage for most services, sole-source

A conceptual model is presented that models the utilization of physician services.

funding) and which captures the (often implicit) behavioral relationships between government (as payer), physicians (as suppliers) and patients (as consumers).

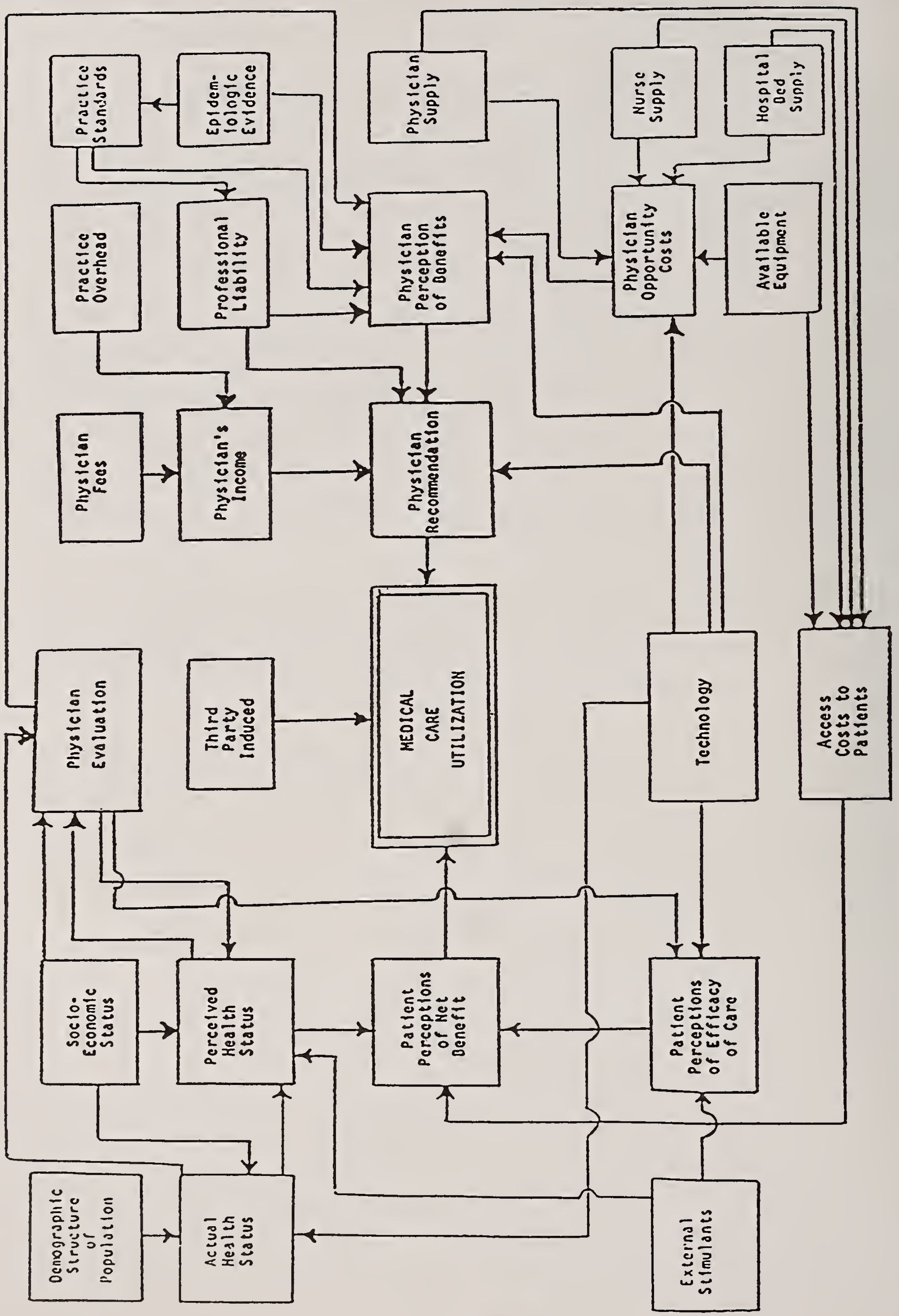
The conceptual model is presented in Figure 1. In the diagram the arrows indicate the direction of the influence of various factors and the interactive nature of the utilization process. In general, demand factors are presented on the left side of the diagram and supply factors on the right, although some variables (such as technology) cannot be easily categorized as either demand- or supply-driven. Fees enter the model through their effect on physician incomes, which in turn influence the physician's recommendations for care. The decision to consume care is determined, in some combination, by the physician's recommendation for care and the patient's perception of the net benefits of care.

The difficulties of empirically testing this model are numerous. Many variables are endogenous, so a complete specification would require a multi-equation system of relations. There are also interaction effects among many of the factors (e.g., physician supply and hospital bed supply) which require the specification of complex interaction terms. Finally, many of the variables are difficult, if not impossible, to quantify. On the demand side, for example, patients' perceptions of the benefits of care and of their health status cannot be captured at an aggregate level with existing data. Similarly, physicians' attitudes towards the efficacy of certain types of care are not directly observable. These problems necessitate devising a simplified version of the utilization process for purposes of empirical estimation.

The simplified version of the comprehensive model is also presented ~~in Figure 2.~~ and It contains only those variables that can potentially be measured using existing secondary data. The variables included are consistent with those frequently cited in previous utilization studies (for a summary see, Paul-Shaheen et al.,1987) as important determinants of physician utilization. XX

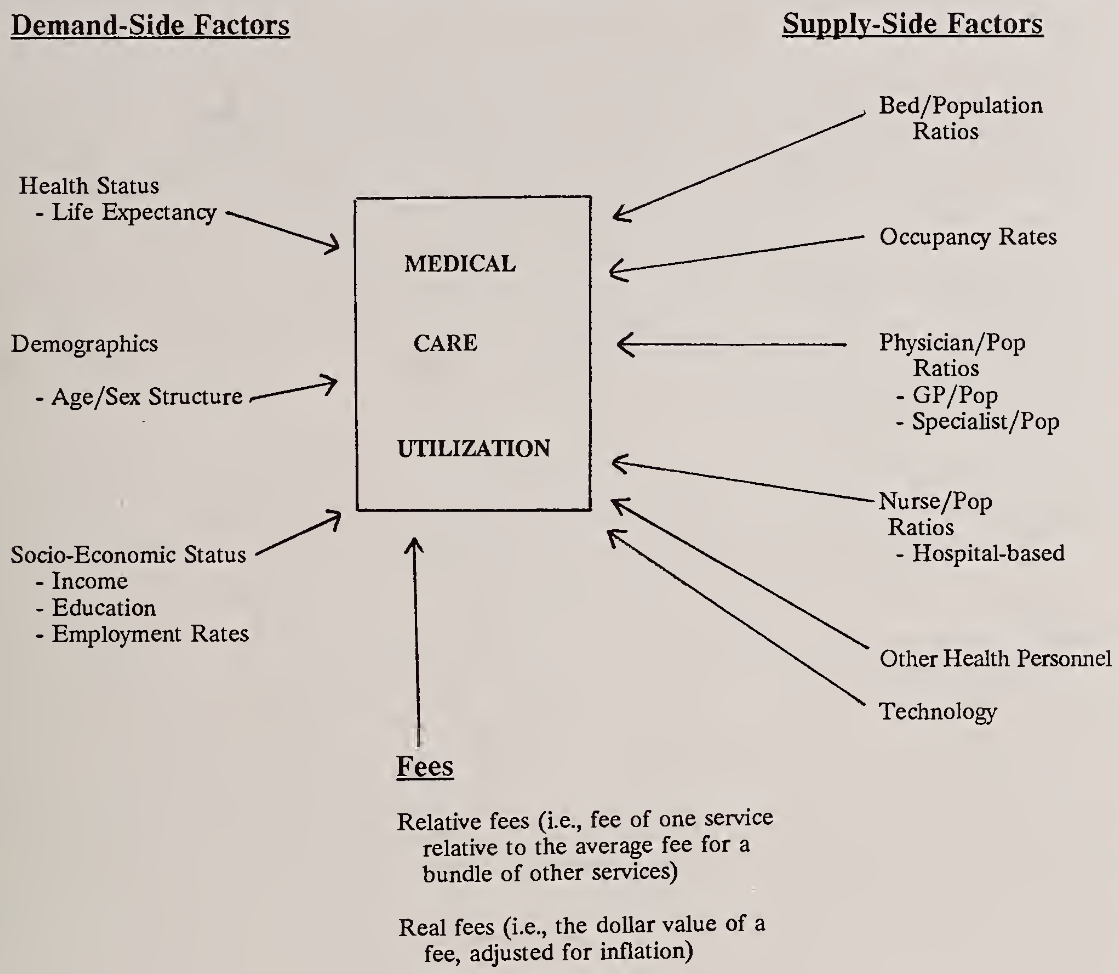
The demand-side variables include health status, demographic characteristics of the population, and socio-economic status. The specific measures of these factors are discussed in Section IV.B. On the supply side, hospital bed supply and occupancy rates, and health manpower variables are included. The main variable of interest for the present analysis, physician fees, is not strictly a demand- or supply-side variable. ~~As noted above; however,~~ in Ontario patients have historically borne few or no costs at the point of service, so it is likely (and indeed it is an assumption of this study) that fees influence utilization through the supply side; that is, through their influence on physicians' incomes.

Figure 1: A MODEL OF THE MEDICAL CARE UTILIZATION PROCESS



The authors wish to thank Robert Evans for providing the basis for this model.

Figure 2: A SIMPLIFIED MODEL OF MEDICAL CARE UTILIZATION



IV. STUDY DESIGN

The unit of analysis is an individual procedure or service. The analysis is limited to 28 procedures which were selected using the criteria outlined below. For each procedure, the relationship between the fee received for the procedure and utilization was analyzed using multivariate regression. Procedure-specific quarterly data were obtained on total utilization and fees in Ontario, by specialty, for the period 1975-1987.

A. Procedure Selection

The following criteria were used to guide the selection of procedures for analysis:

Presence of a Fee Change

In an effort to increase the probability of detecting a utilization response if one indeed existed, the procedures selected were limited to those that underwent cumulative fee increases either substantially greater than or substantially less than the cumulative global (i.e., across-the-board) increases for the period 1975-1987. The procedures thus selected are biased in favor of showing a utilization response. (Appendix B lists the dates when new Schedules of Benefits were introduced in Ontario and indicates the negotiated global rates of increase.)

Frequency of Billing

The procedures chosen were limited to those that were billed frequently by physicians. This was done to avoid low volume procedures that are less likely to be sensitive to fee changes than are commonly-billed items.

Extent of Physician Discretion in Providing the Procedure

The small area variations literature (see, for example, Wennberg et al., 1982; Wennberg and Gittelsohn, 1982; and Paul-Shaheen et al., 1987) was reviewed to identify procedures that had been labelled as "discretionary" in previous studies. Again, this was done to ensure that the set of procedures for analysis was limited to those that had the potential to demonstrate a response. Accordingly, trauma-related and other non-discretionary care was excluded from the analysis.

Dual-Fee Series

Certain of the procedures had separate specialist and general and family practitioner (GP/FP) fees for a portion of the period under analysis. The fees were then merged to form a single fee. The merging of the separate fees typically resulted in a fee increase for GP/FPs and a fee decrease for specialists, and thus provides the potential to study how different physician specialties reacted to opposite fee signals for the same procedure.

Consistent Data Series

The number of procedures available for analysis was considerably limited by data constraints. In the end, only procedures that had both a fee listed and a consistent definition for a sufficient number of years during the period were selected for analysis.

Of the above considerations, only the last was a binding criterion for procedure selection. Each of the final procedures chosen, however, qualifies under at least two of the above criteria. The 28 procedures selected are listed in Table I.[2]

A categorization of the selected procedures according to the size of the cumulative changes in relative and real fees is provided in Table II. The relative fee (defined below) decreased over the period for a majority of the procedures; over 40% had relative fee decreases of greater than twenty-five percent. Most of the procedures that had large decreases are dual-fee codes for which the specialist fee decreased when the separate GP/FP and specialist fees were merged. In the case of real fee changes, the fees of an equal number of procedures increased as decreased over the period. There are considerably more large increases in real fees, however, than there are large decreases. Variations in the size of the fee changes provide an opportunity to examine the relationship between the size of the change and the magnitude and direction of the response.

Because revisions to the fee schedule are made by the Ontario Medical Association (OMA) in closed sessions, it is difficult to determine why specific fee changes occurred. The OMA acknowledges, however, that many changes were made to address issues of equity within the fee schedule (OMA, personal communication). For example, the dual-fee policy was ended in the early 1980s because it was felt that it was inequitable to pay two physicians who perform the same procedure different fees. And, in the early 1980s, psychotherapy and counselling codes received a special increase because of a general perception within the OMA that these services were undervalued at the time. To our knowledge, however, none of the procedures selected for analysis experienced fee changes that were introduced in an attempt to alter utilization.

B. Empirical Model Specification

For each procedure selected, the basic relationship was estimated using multivariate regression as follows:

$$U_{t,i} = \beta_o + \beta_1 FEE_{t,i} + \underline{\beta_2 X_{t,i}} + e_{t,i}$$

where: $U_{t,i}$ is a measure of the utilization of procedure **i** at time **t**;

$FEE_{t,i}$ is a measure of the fee received for providing procedure **i** at time **t**;

$\underline{X_{t,i}}$ is a vector of other independent supply and demand determinants of utilization; $e_{t,i}$ is the error term; and

$\beta_o, \beta_1, \underline{\beta_2}$ are the parameters to be estimated.

1. Dependent Variables

The dependent variable, utilization, is specified in three ways: (1) utilization per capita for persons eligible to receive the procedure; (2) utilization per physician; and (3) utilization per "bundle" (defined as the utilization of a procedure divided by the total utilization of a bundle of consultations and visits commonly performed by the specialists who are the primary providers of the procedures). The first measure of utilization is calculated by dividing utilization by the age-sex sub-population eligible to receive the procedure. This "target" population (indicated in Table I) was determined in consultation with physicians who indicated the population to which, in their judgement, 95% of the utilization can be attributed. To construct the utilization per physician series, utilization was divided by the number of physicians in the specialist group that was the primary provider of the service.

The third measure, utilization per bundle, was constructed for two reasons. First, as is described below, the relative fee is specified as the fee for the procedure divided by a weighted-average fee for the consultations and visits that comprise the specialty-specific bundle corresponding to the procedure. Conceptually, then, it is consistent to define the dependent variable as utilization of the procedure divided by utilization of the bundle procedures (i.e., relative fees may determine relative utilization). Second, if there are unspecified factors affecting the utilization of all services (e.g., consumer attitudes) provided by a specialist group (or even by all physicians), specifying the dependent variable in this manner partially controls for these factors because they enter both the numerator and denominator. It is possible, however, that if some factors affect only the denominator, this specification may contain an additional source of noise.

Table I: PROCEDURES SELECTED FOR ANALYSIS

		Fee Change 1975-87*			
Code	Name	Relative Fee	Real Fee	Target Population	Specialty Group Performing Procedure
A345	Consultation - Radiation Oncology	I	I	all	Radiation Oncology
C002	Subsequent Hospital Visit up to 5 weeks - GP/FP	i	I	all	GP/FP
C062	Subsequent Hospital Visit, up to 5 weeks - Orthopedic Surgery	I	I	all	Orthopedic Surgery
E140	Cataract: Excision, all types by any procedure	D	D	age$\geq$ 60	Ophthalmology
G313**	Electrocardiogram, including pertinent written interpretation: professional component				
	Specialist (SP)	D	d	age$\geq$ 35	Internal Medicine
	General/Family Practitioner (GP/FP)	d	I	age$\geq$ 35	GP/FP
J135	Diagnostic Ultrasound: Abdomen and Retroperitoneum - Abdominal Scan, complete	D	d	all	Diagnostic Radiology
J162	Diagnostic Ultrasound: Pelvic, complete	d	d	women	Diagnostic Radiology
K007	Individual Psychotherapy: per 1/2 hour, GP/FP	i	I	all	GP/FP
K009	Annual Health Exam, age 15 and over	I	I	age$\geq$ 15	GP/FP
K013	Counselling: one or more people, per 1/2 hour, GP/FP	i	I	all	GP/FP

Table I: PROCEDURES SELECTED FOR ANALYSIS, continued.....

Code	Name	Fee Change 1975-87*		Target Population	Specialty Group Performing Procedure
		Relative Fee	Real Fee		
K195	Family Therapy: Inpatient and Outpatient, one or more people, per 1/2 hour	i	I	all	Psychiatry
K197	Psychotherapy: Inpatient and Outpatient, Individual, per 1/2 hour, Psychiatry	d	I	all	Psychiatry
R742	Coronary Artery Repair: single artery	D	D	age≥ 35	Cardiovascular and Thoracic Surgery
R792	Carotid Endarterectomy	d	i	all	General Surgery
S837**	Multiple Ligation and Avulsion, Veins (SP)	D	d	all	General Surgery
S063**	Tonsillectomy				
	Specialist (SP)	d	i	all	Otolaryngology
	General/Family Practitioner (GP/FP)	I	I	all	GP/FP
S205**	Appendectomy (SP)	D	d	all	General Surgery
S247**	Hemorrhoidectomy (with or without sigmoidoscopy or repair of fissure and/or sphincterotomy and/or anal dilation)(SP)	D	d	age≥ 40	General Surgery
S287**	Cholecystectomy (with or without cholangiogram)(SP)	D	d	age≥ 35	General Surgery

Table I: PROCEDURES SELECTED FOR ANALYSIS, continued.....

Code	Name	Fee Change 1975-87*		Target Population	Specialty Group Performing Procedure
		Relative Fee	Real Fee		
S323**	Herniotomy: Abdomen, Peritoneum and Repair - inguinal or femoral - single - adolescents and adults				
	Specialist (SP)	D	d	age≥ 15	General Surgery
	General/Family Practitioner (GP/FP)	d	i	age≥ 15	GP/FP
S655**	Endoscopy: Transurethral Resection of Prostate (SP)	D	d	age≥ 40, men	General Surgery
S754**	Diagnostic Curettage (with or without cauterization, biopsy of cervix, removal of polypi, rubin's test, or hysterosalpingography)				
	Specialist (SP)	D	D	age≥ 15, women	Obstetrics/Gynecology
	General/Family Practitioner (GP/FP)	d	i	age≥ 15, women	GP/FP
S757**	Hysterectomy (with or without adnexa): total or subtotal, abdominal or vaginal (SP)	d	d	age ≥ 15, women	Obstetrics/Gynecology
Z327	Bronchoscopy (with or without biopsy, suction or injection of contrast material)	D	d	all	General Surgery

* I = Increase greater than 25%
i = Increase between 0% and 25%
d = Decrease between 0% and 25%
D = Decrease greater than 25%

** Indicates dual fee. If only a specialist fee is indicated, the analysis was limited to specialists because GP/FP volume was too low.

Table II: CATEGORIZATION OF PROCEDURES BY SIZE OF CUMULATIVE FEE CHANGE, 1975-1987

	Inc >25%	Inc 0-25%	Dec 0-25%	Dec >25%
CHANGE IN RELATIVE FEE	A345	C002	G313GP	E140
	C062	K007	J162	G313SP
	K009	K013	K197	J135
	S063GP	K195	R792	R742
			S063SP	R837SP
			S323GP	S205SP
			S754GP	S247SP
			S757SP	S287SP
				S323SP
				S655SP
				S754SP
CHANGE IN REAL FEE	A345	R792	G313SP	E140
	C002	S063SP	J135	R742
	C062	S323GP	J162	S754SP
	G313GP	S754GP	R837SP	
	K007		S205SP	
	K009		S247SP	
	K013		S287SP	
	K195		S323SP	
	K197		S655SP	
	S063GP		S757SP	
			Z327	

Note: GP indicates fee for General Practitioner/Family Practitioner; SP indicates fee for Specialist.

2. Independent Variables

Relative Fee: The relative fee is intended to measure the financial attractiveness of the remuneration received for the procedure under consideration, compared to other procedures the physician could perform instead, i.e., the fee relative to the opportunity cost of performing the procedure. Actual OHIP fees were used to construct the relative fee measure, though ideally fees measured in dollars per unit of time (adjusted for work effort and practice costs) would have been preferred. A resource-based relative-value scale (RBRVS), however, does not exist for the Schedule of Benefits in Ontario. Moreover, the RBRVS would have had to span the period 1975-1987 if it was to be used with these particular time-series data. In the absence of a resourced-based measure, we have constructed an alternative relative fee measure.

The relative fee variable is calculated as follows:

$$\text{Relative Fee}_{t,i} = \frac{\text{Fee}_{t,i}}{\displaystyle\sum_{\substack{j=1\\ i=j}}^{J} \frac{u_{t,j}}{\displaystyle\sum_{\substack{j=1\\ i=j}}^{J} u_{t,j}}\, \text{Fee}_{t,j}}$$

where there are J consultations and visits in the specialty bundle;
$u_{t,j}$ is the utilization of procedure j in period t;
J does not include procedure i;
and $\text{Fee}_{t,i}$ is the nominal fee for procedure i at time t.

The numerator is the nominal fee of a given procedure. The denominator is the utilization-weighted average fee for a bundle of consultations and visits over which the physician has some discretion. If the procedure being analyzed is a visit normally included in the bundle, it is removed from the bundle in the calculation of the relative fee for that procedure.

The relative fee variable is intended to act as a proxy for the financial attractiveness of performing a procedure. The weighted-average fee in the denominator serves as a crude measure of the opportunity cost to the physician of performing the particular procedure being considered (crude because time, work effort and associated practice costs are not explicitly incorporated). Restricting the bundle to consultations and visits has the advantage of limiting the number of items to a manageable number while including frequently-billed procedures. A listing of the consultations and visits that comprise the bundle for each specialty is provided in Appendix C.

Real Fee: A second measure of fees, real fees, was defined for the analysis. The real fee is the nominal fee deflated by the Toronto-area all-items Consumer Price Index (CPI). The rationale for this second measure is that physicians, although price sensitive, might not consider relative fees (as defined herein) when making decisions regarding service provision. Instead, they may react to changes in the (deflated) dollar value of the service.

Fee Dummy: The third fee variable is a dummy variable. During the thirteen-year period, 14 of the 28 procedures underwent one-time, large changes (defined as a change of greater than or equal to 20%) in relative fees.[3] For these procedures, utilization responses were analyzed using a fee dummy variable in addition to the analyses using the continuous fee variables defined above. The fee dummy has a value of one if the observation was drawn from after the large fee change, and zero otherwise. The use of a dummy variable allows for an analysis of the extent to which utilization shifted in response to the one-time, large fee change.

Other Independent Variables: The health manpower variables include measures of the supply of physicians, nurses, and radiological technicians, each of which is specified on a per capita basis.

The measure of physician supply is the number of active civilian physicians (excluding interns and residents), by specialty. Nurse supply is measured as the number of full-time-equivalent nurses employed in hospitals.[4] The number of full-time-equivalent radiological technicians employed in hospitals was used when analyzing radiological procedures.

The variables representing hospital capacity and bed availability are the number of hospital beds (by type of ward or unit), specified on a per capita basis, and the average occupancy rate for acute care hospitals in Ontario.

On the demand side, the measures of socio-economic and demographic characteristics of the population are per capita income, educational attainment, the unemployment rate, and the percentage of the population aged 60 or over. Income is a crude proxy for both health status (when, as in Canada, out-of-pocket costs for physician services are zero and hence income is not a measure of access) and the opportunity cost of seeking care. It is specified as real personal income per capita. The unemployment rate is the seasonally adjusted average for Ontario. Educational attainment is measured as the percentage of the population aged 15 and over without any secondary-school education. Finally, the percentage of the population aged 60 or over is included to capture, in part, changing demographics. Ideally, one would standardize the dependent variable to take into account changes in the age/sex mix of the population. Age/sex-specific utilization rates are not available in Ontario, however, for individual procedures.

The socio-economic characteristics discussed above can be interpreted, to some extent, as proxies for health status, but currently no good explicit measures of population health status are available. Morbidity rates are based on hospital utilization and therefore cannot be used as an explanatory variable in a utilization equation because of circularity. Mortality rates provide an alternative, albeit crude, measure of health status, but disease-specific, age/sex standardized mortality rates are not readily available in a consistent series for the entire period under study. As an alternative (and an admittedly rough) approximation of health status we employed average life expectancy at birth.

Changes in utilization over time might have occurred for a number of reasons other than those captured by the above variables. For example, advances in medical technology, revisions of practice standards, and changing patient expectations regarding care may all affect utilization yet are not explicitly incorporated in the empirical model. A linear time trend variable, T (and when appropriate, T^2), is included to capture secular changes in utilization that are the result of factors such as these. In addition, we attempted to choose procedures that were less likely to be affected by these factors. In the case of technology, most of the procedures chosen were not significantly affected by advances in medical technology, cataract excision and diagnostic ultrasounds being notable exceptions. We also attempted to choose procedures for which information on efficacy and effectiveness (and, consequently, practice standards) did not change substantially over the period study.

Because many of the utilization series exhibit pronounced seasonality, a full set of seasonal dummies is specified. Finally, a dummy variable for the cessation of extra-billing is also specified.

Not all of these independent, or control, variables entered into a given equation. A number of them are alternative measures of the same underlying factor thought to influence utilization. A summary of the variable definitions is provided in Table III. Data sources are provided in Appendix D.

C. Econometric Specification Issues

The utilization equations were estimated using the methods outlined in Pagan (1974), which permits one to test for first- through fourth-order correlation and make the appropriate adjustments when necessary.

Because several of the independent variables increased or decreased steadily over the period of analysis, they are highly correlated with each other and with the linear time trend (T). Although multicollinearity does not bias the affected parameter estimates, it does substantially increase their variances. The implications are that the parameter estimates are sensitive to the addition or deletion both of other independent variables and data observations and that independent variables that truly have an effect on the dependent variable may not be statistically significant.[5]

Table III: DEFINITIONS OF VARIABLES

Dependent Variables:

UTILP : utilization per thousand target population
UTILS : utilization per specialist
UTILB : utilization per specialty bundle associated with the procedure

Independent Variables:

RELFEE : fee for a procedure divided by the weighted-average fee for the specialty bundle associated with the procedure
DFEE : real fee, deflated by the Toronto all-items Consumer Price Index
FEEDUM : dummy variable denoting whether observation is from before or after a one-time, large relative fee change (FEEDUM = 1 after fee change)
SPPOP : number of specialists per thousand population
NURSHP : total number of full-time-equivalent nurses employed in hospitals, per thousand population
TECHP : total number of full-time-equivalent radiological technicians employed in hospitals, per thousand population
BEDTAP : total number of beds in acute care hospitals, per thousand population
BEDMSP : total number of beds in medical surgical units, per thousand population
BEDOBP : total number of beds in obstetrical units, per thousand population
BEDPSP : total number of beds in psychiatric units, per thousand population
OCCA : occupancy rate in acute care hospitals
DPCI : personal income per capita, deflated by the Toronto all-items Consumer Price Index
EDUC : percent of population without any secondary school education
URATE : seasonally adjusted unemployment rate
PCT60 : percent of total population equal to or over age 60
LIFE : average life expectancy at birth, by sex
T, T2 : linear time trend, squared trend
DUMMIES : Q1, Q2, Q4 are seasonal dummy variables
EBD : dummy variable denoting the cessation of extra-billing (EBD = 1 after first quarter 1986)

The problem is most serious for: the percentage of the population aged 60 or over (PCT60); real personal income per capita (DPCI); life expectancy at birth (LIFE); and the proportion of population without secondary school education (EDUC). Their correlations with the time trend are 0.99, 0.95, 0.99, and -0.97, respectively. For a number of specialties, the correlation between the number of specialists per thousand and the time trend is also over |0.90|. In addition, for a number of procedures, one or both of the relative fee and real fee variables are highly correlated with other independent variables. The process of selective addition and deletion of variables was used to reveal which parameter estimates were highly sensitive to equation specification. This may have introduced an omitted variables bias for the remaining coefficients. Because the focus of the analysis is on the fee variables, bias of the coefficients of the control variables is less problematic, though it does preclude assessing the effect of fees compared to these other factors. Accordingly, in the discussion of the results, the findings for the control variables are de-emphasized.

A policy of parsimony in specification was adopted in an effort to reduce the complexity of the interactions that may affect coefficient estimates and to save degrees of freedom. Because EDUC and LIFE are likely poor proxies for the demand side factors they are intended to represent, and are highly collinear with the time trend, they were dropped from the regressions. For similar reasons, PCT60 and DPCI were also eventually deleted from the final equations for most procedures. On the supply-side, given the secular decline in beds per capita and the corresponding high occupancy rates of Ontario hospitals, it was felt that beds better represented capacity constraints than did nurse supply; beds per capita was therefore used in the final regressions.

It is possible that certain of the variables, particularly fees, affect utilization with a lag. It may take a period of time for physicians to learn of fee changes, and additional time to adjust behavior in response to them. We experimented with lags for the fee and bed supply variables but these specifications did not perform better than non-lagged specifications. Lags of two periods or less had little effect on the signs, magnitudes, or significance levels of the fee coefficients. With lags of greater than two periods the fee coefficients were less stable, but no patterns emerged. The final equations, therefore, do not contain lagged variables.

Finally, it was recognized that the variable specifications may introduce spurious correlation between the dependent variable and some of the independent variables. When the dependent variable is specified as utilization per capita and the independent supply variables are also specified on a per capita basis, the presence of population in the denominator of each variable can induce spurious positive correlation. Similarly, spurious negative correlation may be present between the utilization per physician and physician per population.

V. RESULTS

The analysis of fee changes was conducted in two parts. The first part used the continuous fee variables (relative and real fees) to analyze the effect of changes in fees over the thirteen-year period. The second part selected only those procedures (14 in total) that experienced a one-time, large relative fee change and the fee dummy variable was used to estimate the impact of the fee change.

A. Analysis Using Continuous Fee Measures

There are five basic equation specifications that combine the three measures of utilization and the two measures of fees, namely,

(1) UTILP = f(RELFEE, $\underline{X}$)
(2) UTILP = f(DFEE, $\underline{X}$)
(3) UTILS = f(RELFEE, $\underline{X}$)
(4) UTILS = f(DFEE, $\underline{X}$)
(5) UTILB = f(RELFEE, $\underline{X}$)

where UTILP is utilization per capita,
UTILS is utilization per physician,
UTILB is utilization per bundle,
RELFEE is the relative fee,
DFEE is the real fee, and
$\underline{X}$ is a vector of other independent variables.

Initially all five specifications were estimated. Based on these preliminary regression results the specification using utilization per bundle as the dependent variable was dropped from the analysis. The estimated coefficients were highly unstable and the independent variables explained only a relatively low proportion of the variation in the dependent variable (particularly for time series analysis).

Space does not permit reporting the full set of results for the four remaining specifications. Therefore, results of the equations using utilization per capita and utilization per physician as dependent variables were compared to determine if there were differences in the signs and significance levels of coefficients. The comparison indicated that the results were similar, with the exception of the physician supply variable which was, as expected, more often negative in the utilization per physician specifications. Because of the similarity in findings, the presentation of results is limited to the utilization per capita specifications ((1) and (2) above). A summary of the results for the utilization per physician specifications is provided in Appendix E. The full set of results for each utilization per capita equation is contained in Appendix F.

The results for the primary variable of interest, fees, are presented in Tables IV and V. Because the focus of the analysis is on the effect of changes in fees, the regression results for the fee coefficients are presented separately from the results for the other independent variables. Tables IV and V thus provide the estimated fee coefficients and the associated elasticities for each procedure.

The most striking result that emerges is the small proportion of statistically significant fee coefficients in both the relative fee and real fee specifications. Among the 28 procedures analyzed, only ten have significant relative fee coefficients and only nine have significant real fee coefficients. A total of 13 procedures exhibited a significant utilization response in at least one of the fee specifications. Of these 13 procedures, six had significant coefficients across both fee specifications. For three procedures -- cataract excision, tonsillectomy (SP), and hysterectomy (SP) -- the results indicated a positive relationship between fees and utilization; that is, a decrease in fees is associated with a decrease in utilization and an increase in fees is associated with an increase in utilization. The three other procedures - diagnostic curettage (GP/FP), ligation and avulsion of veins, and cholecystectomy (SP) - showed a consistent negative relationship between fees and utilization; that is, a decrease in fees is associated with an increase in utilization and an increase in fees is associated with a decrease in utilization. The remaining seven procedures had a statistically significant fee coefficient in only one of the fee specifications. For example, the fee coefficient is significant and negative for coronary artery repair under the relative fee specification but it is positive and insignificant under the real fee specification.

The direction of the response among the seven procedures is not consistent either, although the small number of procedures makes it impossible to determine if this result is robust. Generally, though, the relative fee specification yields proportionally more negative than positive responses, while in the case of the real fees, an almost equal number of positive and negative responses is obtained.

The elasticity, defined as the percentage change in per capita utilization associated with a one percent change in fees, is shown in the second column of Tables IV and V. Among those procedures with significant fee coefficients, the elasticities range in value from $|0.086|$ to $|1.259|$; however, for only one procedure, coronary artery repair, is the elasticity greater than 1.0. For approximately one-half of the procedures, the elasticity is $|0.5|$ or greater, which implies that, when a response does occur, it is potentially of a non-trivial magnitude. But it must be remembered that the predominant result is one of no response; fewer than 20% of procedures in both the relative fee and real fee specifications had significant coefficients and elasticities exceeding $|0.5|$.

One of the objectives of the analysis was to determine whether physicians responded differentially to relative and real fee changes. A comparison of Tables IV and V indicates that responses are generally consistent across both specifications of the fee variable. An almost equal number of procedures have significant coefficients in both cases, although there are slight differences in the actual procedures. When the same procedures did show significant responses in both fee specifications, the magnitudes of the elasticities were roughly equal.

TABLE IV: REGRESSION COEFFICIENTS AND ELASTICITIES FOR RELATIVE FEE VARIABLE

Positive and Statistically Significant Response

		Fee Coefficient	Elasticity[+]
E140	Cataract Excision, all types	0.243**	0.974
S063	Tonsillectomy (SP)	0.136**	0.737
S757	Hysterectomy (SP)	0.011**	0.153

Negative and Statistically Significant Response

		Fee Coefficient	Elasticity
R742	Coronary Artery Repair	-1.018E-03**	-1.259
S754	Diagnostic Curettage, (GP/FP)	-0.068**	-0.361
R792	Carotid Endarterectomy	-2.010E-03**	-0.603
R837	Ligation and Avulsion, Veins (SP)	-0.012**	-0.527
S287	Cholecystectomy (SP)	-0.016**	-0.215
S205	Appendectomy (SP)	-4.829E-03**	-0.141
S754	Diagnostic Curettage (SP)	-0.084*	-0.086

Non-Statistically Significant Response

		Fee Coefficient	Elasticity
C002	Subsequent Hospital Visit, GP/FP	4.087	0.037
C062	Subsequent Hospital Visit, Orthopedic Surgery	6.092E-03	1.441E-03
G313	Electrocardiogram, Professional Component, (GP/FP)	1.937	0.027
J135	Diagnostic Ultrasound (Abdominal)	0.242	0.279
K007	Individual Psychotherapy, GP/FP	0.064	3.588E-03
K013	Counselling, GP/FP	1.377	0.313
K195	Family Therapy	0.245	0.079
S323	Herniotomy (GP/FP)	2.001E-03	0.214
S323	Herniotomy (SP)	2.648E-03	0.053
Z327	Bronchoscopy	0.010	0.153
A345	Consultation - Radiation Oncology	-9.050E-03	-0.078
G313	Electrocardiogram, Professional Component (SP)	-48.975	-0.247
J162	Diagnostic Ultrasound (Pelvic)	-0.652	-0.347
K009	Annual Health Exam, age >14	-1.747	-0.194
K197	Individual Psychotherapy, Psychiatry	-6.520	-0.173
S063	Tonsillectomy (GP/FP)	-4.920E-03	-0.105
S247	Hemorrhoidectomy (SP)	-3.545E-03	-0.098
S655	Endoscopy, TURP (SP)	-0.011	-0.200

[+] evaluated at mean values

* significant at 10% level

** significant at 5% level

TABLE V: REGRESSION COEFFICIENTS AND ELASTICITIES FOR REAL FEE VARIABLE

Positive and Statistically Significant Response

	Fee Coefficient	Elasticity+
A345 Consultation - Radiation Oncology	1.045E-03*	0.126
E140 Cataract Excision, all types	0.012**	0.989
S063 Tonsillectomy (SP)	4.552E-03**	0.513
S757 Hysterectomy (SP)	5.719E-04**	0.161

Negative and Statistically Significant Response

	Fee Coefficient	Elasticity
G313 Electrocardiogram, Professional Component (SP)	-1.710**	-0.196
S754 Diagnostic Curettage (GP/FP)	-3.757E-03**	-0.389
S754 Diagnostic Curettage (SP)	-5.567E-03**	-0.111
R837 Ligation and Avulsion, Veins (SP)	-1.292E-03**	-0.979
S287 Cholecystectomy (SP)	-1.301E-03**	-0.291

Non-Statistically Significant Response

	Fee Coefficient	Elasticity
C002 Subsequent Hospital Visit, GP/FP	0.788	0.091
J162 Diagnostic Ultrasound (Pelvic)	0.034	0.295
K013 Counselling, GP/FP	0.054	0.153
K195 Family Therapy	0.025	0.170
K197 Individual Psychotherapy, Psychiatry	0.170	0.095
R742 Coronary Artery Repair	7.135E-06	0.161
S063 Tonsillectomy (GP/FP)	1.145E-04	0.051
S323 Herniotomy (SP)	1.119E-07	3.803E-05
S655 Endoscopy, TURP (SP)	5.675E-05	0.017
Z327 Bronchoscopy	4.400E-04	0.109
C062 Subsequent Hospital Visit - Orthopedic Surgery	-7.094E-03	-0.036
G313 Electrocardiogram, Professional Component (GP/FP)	-0.020	-6.500E-03
J135 Diagnostic Ultrasound (Abdominal)	-1.027E-03	-0.019
K007 Individual Psychotherapy, GP/FP	-0.075	-0.052
K009 Annual Health Exam, age >14yr	-0.023	-0.033
R792 Carotid Endarterectomy	-2.438E-05	-0.122
S205 Appendectomy (SP)	-2.967E-04	-0.143
S247 Hemorrhoidectomy (SP)	-2.450E-04	-0.112
S323 Herniotomy (GP/FP)	-1.912E-04	-0.350

+ evaluated at mean values

* significant at 10% level

** significant at 5% level

In addition to the principal question of the overall responsiveness of utilization to fee changes, questions of whether responses differ by type of procedure or by the magnitude and direction of the fee change were examined. An analysis by type of procedure indicates that all of the "responsive" procedures, with one exception (consultation, radiation oncology), fall into the category of diagnostic and surgical procedures. This finding is consistent with the results of the study by Mitchell et al. (1989), which found that when Medicare fees were frozen in from 1984 to 1986 the utilization of diagnostic and surgical services increased significantly more than those of medical services (particularly visits). The present results may be confounded, however, by the fact that approximately 70% of the procedures analyzed are diagnostic or surgical services, thus increasing the chances, ceteris paribus, that these procedures will be among those identified as having a significant response.

The second question concerns whether the direction and size of the response is a function of the direction of the fee change. A pattern did emerge: all but three of the procedures with a significant fee coefficient underwent fee decreases. In the case of the relative fee specifications, for which significant coefficients were obtained only among procedures that underwent fee decreases, this finding could be in part attributable to the fact that relative fees decreased for approximately 70% of all the procedures. In the real fee specifications, for which procedures are split evenly between those with increases and those with decreases, six of the nine significant responses occurred in procedures that experienced fee decreases. Although this pattern suggests that physicians (and hence utilization) may be more responsive to decreases in fees than to increases, sample limitations require that one must be cautious in making such an inference.

Although the main findings provide little support for a strong, consistent utilization response, caution is advised in inferring a general absence of, or a weak, response. As indicated in Section IV.C., multicollinearity between the fee variables and other independent variables may be partly responsible for this result. To assess the severity of multicollinearity we employed the methods outlined in Belsley et al. (1980). The results indicate that collinearity was at least partly responsible for the lack of significant responses. Among the procedures that demonstrated the least evidence of collinearity, the majority had significant coefficients; among procedures that demonstrated severe collinearity, fewer than one-quarter had significant fee coefficients. (Details of this assessment are provided in Appendix G.) The interpretation of the results must therefore be tempered by the possibility that, for many of the procedures, regression methods were unable to identify a response, even if it did exist.

B. Analysis of Responses to One-time, Large Changes in Relative Fees

The analysis of one-time, large fee changes is limited to those procedures for which the relative fee underwent a one- period change greater than or equal to 20%. Fourteen of the 28 procedures met this criterion. The dummy fee coefficients resulting from regressing utilization per capita on a relative fee dummy variable and on the same set of control variables as those used in the continuous fee change are presented in Table VI (the full set of results is presented in Appendix H.) Because we are focusing only on procedures that experienced large changes over a short period of time, a much higher proportion (over 55%) of these 14 procedures exhibited a significant utilization response than did the full set of 28 procedures. Among the procedures with significant coefficients, with the exception of one procedure, there is a consistent inverse relationship between the fee change and the utilization response.

When the fee change is specified using a dummy variable it is not possible to compute a standard elasticity to measure the degree of responsiveness to fee changes. Therefore to approximate elasticities we calculated the percentage change in utilization implied by the dummy variable coefficient. The percentage changes are listed in Table VI. The largest response is for coronary artery repair, in which a 20% decrease in relative fees implies a 37% increase in utilization. As a measure of responsiveness, the ratio of the percentage change in utilization to the percentage change in the fee was calculated. Among procedures with significant coefficients, the values varied from $|0.14|$ to $|1.85|$. This range of values is consistent with the elasticities obtained in the analysis using the continuous fee measure.

Although these results are more suggestive of a utilization response than the previous results, it is still the case that there is a strong pattern of no response - and this occurs among those procedures for which one expects the probability and magnitude of a response to be highest.

C. Results for Control Variables

The regression results for the control variables are presented in Table VII. Because the results were similar for the relative fee and real fee specifications, only the former are reported in Table VII. As discussed earlier, multicollinearity among regressors confounds the results, nonetheless, some patterns do emerge. The number of physicians per capita tends to be positively related to utilization; in the majority of instances in which the coefficient was significant, it was also positive. Beds also appear to have a predominately positive correlation with utilization, although the negative response found in 7 of the 24 equations is surprising, especially for the hospital-based procedures. The unemployment and income variables show no consistent response.

Clearly the variables that do most of the explaining in the regressions are the time trend and seasonal dummies. In most equations, each is significant at the 5% level. This is not surprising given that time series data are employed; the time trend is positive when utilization is rising and negative when it is falling. The positive signs on all the quarterly dummies indicate that utilization is significantly lower in the third quarter (summer) than during the rest of the year. Finally, the extra-billing dummy variable is generally positive, indicating that utilization of certain procedures increased when extra-billing was halted.

TABLE VI: RESULTS OF FEE DUMMY VARIABLE REGRESSIONS

Statistically Significant Response to a One-Time, Large Relative Fee Decrease

	Coefficient	One-time % Change in the Relative Fee	Implied % Change in Utilization
R742 Coronary Artery Repair	0.008**	-20	+37
R792 Carotid Endarterectomy	0.018**	-20	+24
S754 Diagnostic Curettage (SP)	0.172**	-35	+ 5
S655 Endoscopy, TURP (SP)	0.051**	-21	+ 5
R837 Ligation and Avulsion, Veins (SP)	0.038**	-30	+31
S205 Appendectomy (SP)	0.016**	-26	+ 5
S754 Diagnostic Curettage (GP/FP)	-0.069**	-30	- 5

Statistically Significant Response to a One-Time, Large Relative Fee Increase

	Coefficient	One-time % Change in the Relative Fee	Implied % Change in Utilization
G313 Electrocardiogram, Professional Component (GP/FP)	-0.755**	+29	- 5

Non-Statistically Significant Response to a One-Time, Large Relative Fee Change

	Coefficient	One-time % Change in the Relative Fee	Implied % Change in Utilization
A345 Consultation - Radiation Oncology	0.008	+34	+ 2
C062 Subsequent Hospital Visit - Orthopedic Surgery	-0.010	+25	- 1
K195 Family Therapy	0.149	+20	+ 3
S247 Hemorrhoidectomy (SP)	0.011	-27	+ 4
S287 Cholecystectomy (SP)	0.053	-23	+ 4
S323 Herniotomy (SP)	-0.011	-23	- 2

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* significant at 10% level
** significant at 5% level

Table VII: REGRESSION RESULTS FOR CONTROL VARIABLES (DERIVED USING UTILIZATION PER CAPITA AND RELATIVE FEE SPECIFICATION)

Procedure	Control Variables										
	SPPOP	TECHP	BEDS	URATE	DPCI	T	T2	Q1	Q2	Q4	EBD
A345	+**		+	+		-			+**		+**
C002			+**			-**		+**	+**	+**	
C062	-**		+**	+**		+**			+**	+	
E140	+**		+**			+**		+**	+**	+**	
G313(GP)	+		-	+		+**		+**	+**	+**	+
G313(SP)	-		+	-		+**		+**	+**	+**	+**
J135	+	+**		-*		+**		+**	+**	+**	
J162	+	+				+**		+**	+**	+**	-
K007	-				+	+**		+**	+**	+**	+
K009	-**		+	+	-**	+**		-*	+	-**	
K013	+		-			+**		+**	+**	+**	-
K195	+			+	+**			+**	+**	+**	
K197	+**		+			+		+**	+**	+**	+**
R742	-*		+			-**		+**	+**		+**
R792	-		-	+		+	-	-	+*		-**
R837(SP)	-		-*	+**		-**	+	+**	+**	-	+
S063(GP)	+**		+**	-		-**		+**	+**	+**	
S063(SP)			+			-**		+**	+**	+**	+**
S205(SP)	+**		+**			-*		-**	+**	-**	
S247(SP)	-		+**			-**		+**	+**	+**	

Table VII: REGRESSION RESULTS FOR CONTROL VARIABLES (DERIVED USING UTILIZATION PER CAPITA AND RELATIVE FEE SPECIFICATION), continued...

Procedure	Control Variables										
	SPPOP	TECHP	BEDS	URATE	DPCI	T	T2	Q1	Q2	Q4	EBD
S287(SP)	-*		+			-**	+**	+**	+**	+**	
S323(GP)	+		-	-		-		+**	+**	+**	
S323(SP)			-			-		+**	+**	+**	
S655(SP)	+		+**			+**		+**	+**	+**	
S754(GP)	+*		+	-		-**		+**	+**	+**	
S754(SP)	-		-**			-**		+**	+**	+**	-**
S757(SP)	+**		+		-**	+**		+**	+**		
Z327	-		+			+		+**	+**	+**	+

+ indicates positive coefficient
- indicates negative coefficient
* statistically significant at 10% level
** statistically significant at 5% level

Note: A blank space indicates that the variable was not included in the regression equation for that procedure.

VI. DISCUSSION

The main conclusion of the analysis is twofold: utilization can respond to fee changes (as evidenced in 13 of the 28 procedures), but this response is neither inevitable nor widespread. Indeed, for a majority of procedures, there was no significant utilization response. Moreover, this lack of response occurred among procedures for which a response was both possible and likely.

This general finding, to some degree, contradicts previous evidence that physicians respond to across-the-board changes in fees. Whenever an analysis fails to reject the null hypothesis one must question whether the finding is in fact true or whether the study simply did not have the power to detect the relationship. That is, there are two possible explanations for the present results (i) physicians actually did respond to changes in fees during the period examined, but the methods and design were not capable of detecting the response; or, (ii) physicians truly did not respond to procedure-specific fee changes.

With respect to the first explanation, there were a number of data constraints that affected the specification and estimation of the utilization equations. The regression analysis was compromised by problems of multicollinearity, both among the control variables and between the fee variables and the control variables. The latter collinearity may have seriously affected the ability of the regression methods to isolate the independent effect of fees on utilization, leading to the observed pattern of insignificant fee coefficients. In addition, the constraints of the sample size may be partly responsible for the lack of significant coefficients.

The inability to measure a number of determinants of utilization also raises the possibility of omitted variable bias. An obvious omission, for example, is the lack of an adequate measure of population health status. Secular changes were likely captured by the time trend, but the inability to control explicitly for these factors must be seen as a limitation.

Assuming, though, that there truly was no utilization response, one might ask about the generalizability of the results. If physicians did not respond to fee changes, why not? Is their lack of responsiveness a result of an inability or an unwillingness to respond? A partial explanation might be found in the organizational and financial arrangements in Ontario from 1975 to 1987 and in the constraints that physicians faced during this period.

One important constraint was the limitation on hospital bed supply. The number of hospital beds per physician fell from 3.16 in 1975 to 2.06 in 1987. On a per capita basis, the corresponding figures were 4.83 in 1975 and 3.96 in 1987. This may have been a binding constraint for hospital-based surgical procedures. Consequently, although many of the hospital-based procedures selected were, in principle, discretionary, and therefore offered the potential for a utilization response, the constraint on bed availability may have prevented one.

Another system-specific influence that should be taken into consideration is the level of physicians' incomes and its impact on their reactions to fee changes. The size of the overall rates of increase in fees negotiated between the provincial government and the medical association varied considerably during the study period. During the late 1970s, the average rate of increase in physician fees was below the rate of inflation; during the early and mid-1980s, the overall fee increases were considerably higher than the rate of inflation. One might expect the response to changes in specific fees to vary according the average change in fees. In particular, during a period of rapidly increasing fees, physicians may not be sensitive to procedure-specific relative fee changes. During periods of restraints on fee increases, however, they may be more sensitive to relative changes within the schedule. Because the analysis estimated an average response over the entire period, sub-periods during which physicians may have responded could have been masked.

Another factor potentially affecting physician responses is the source and motive of the fee change. In Ontario, relative fees are determined by the Ontario Medical Association and these changes (as opposed to across-the-board changes) are therefore not seen to be imposed directly by the government. Consequently, a change in relative fees is less likely to be perceived as a threat to physician autonomy. The reaction might be different, however, if the fee change results from the introduction of, say, a government-imposed RBRVS-based fee schedule. Thus the environment which begets the fee change might have an important influence on the behavioral reaction to it.

It should also be emphasized that the nature of the fee changes examined in this analysis were quite different than those which will accompany the introduction of an RBRVS-based fee schedule. This study analyzed isolated changes in fees within the Schedule of Benefits, and although we attempted to limit the analysis to procedures that were billed frequently, it is unclear what the income-implications of any single fee change was for physicians. In contrast, the introduction of an RBRVS-based fee schedule will, over a very short period of time, alter a number of fees simultaneously, and will have rather dramatic income implications for a number of specialties if there is no utilization response (Physician Payment Review Commission, 1989). The response to isolated, gradual, changes in relative fees may be quite different (and weaker) than the response to a general realignment of relative fees. The analysis of the one-time, large relative fee changes, which were of similar magnitudes as those which will accompany the introduction of an RBRVS-based fee schedule (Physician Payment Review Commission, 1989), suggested, in more than half the cases, utilization did respond. Given the constraints faced by Ontario physicians during the period analyzed, it is conceivable that the response in the U.S. might be greater than that found in Ontario.

The results of this study have added to our understanding of economic incentives and physician behavior. The findings indicate that although physicians can initiate utilization shifts in response to fee changes, they do not always do so. Much remains unknown about the dynamics of the fee-utilization relationship. We have little understanding, for example, of why the utilization of some procedures is sensitive to fee changes, while for others it is not. We have not fully explored the implications of either the size of the fee change or the context in which it is initiated. Better evidence is also needed on whether utilization responds symmetrically to fee increases and decreases. These questions can only be addressed with larger (cross-sectional) data sets and through the analysis of additional procedures. The present study has provided a first step in better understanding the intricate relationship between fees and utilization.

FOOTNOTES

1. The workshop was held to discuss the determinants of utilization and methods for measuring them. Thirty representatives from government (both provincial and federal), academic institutions, and the medical associations attended.

2. Six of the 28 procedures selected had data for less than the full 13 years. None had fewer than nine full years of data.

3. More specifically, a one-time, large change was defined as a change of at least 20% at one point in the fee series and a change of no more than 10% at any other point in the study period.

4. We were unable to construct a thirteen-year series for the number of nurses employed in physicians' offices. We did not use a total licensed nurse series because licensure gives no indication of the number of nurses who are actually practicing at any given time.

5. In an effort to reduce the effects of multicollinearity,we experimented with the method of principal components, but both supply- and demand-side control variables loaded heavily onto the first principal component, which then had no economic interpretation.

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APPENDIX A

PHYSICIAN PAYMENT IN ONTARIO

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PHYSICIAN PAYMENT IN ONTARIO

Since 1971, each province in Canada has operated a publicly-funded provincial health insurance plan in which the government is the primary payer for medical services provided by physicians to residents of the province. To qualify for federal funding, each province must insure that coverage for physician services is universal and comprehensive. Physician reimbursement is based almost entirely on fee-for-service payment.

The basic remuneration system for physician services is similar to that in the U.S. The key difference is that physicians are not able to set their own fees; they must accept the fees listed in the Schedule of Benefits. [Until 1986, billing at a rate above the listed fee was permitted, but it was not common (Heiber and Deber, 1987]. Physicians can opt out of the provincial insurance plan if they are dissatisfied with the reimbursement, but because this requires maintaining a practice in which their patients pay the full cost of services provided (i.e., the patients are disenfranchised from the plan), it is not a viable option for most physicians. The process through which fees are set, therefore, is of paramount interest to physicians.

Within each province, fees are determined through negotiations between representatives of the provincial health insurance plan and representatives of the provincial medical association, and are published annually by the government in a provincial Schedule of Benefits. In Ontario, there are three steps in the fee-setting process. First, there are negotiations Appendix A: Physician Payment in Ontario, between the provincial government and the provincial medical association regarding the overall, or global, rate of increase in the Schedule of Benefits for the coming year (two-years if negotiations are bi-annual). Second, there are negotiations within the medical association regarding how this overall increase is to be allocated among specialties. Essentially, each specialty section submits a request to the association's Committee on Tariffs for a certain proportion of the global increase to be allocated to services provided by that specialty. Based on these submissions, the Committee on Tariffs allocates the global increase among the specialty sections. Finally, individual Section (specialty) subcommittees determine the allocation of the budget to specific fee changes within each specialty (Ontario Medical Association, 1984).

Within the Ontario Medical Association, the factors that have guided the allocation of the global increase to the various specialty sections have changed over time. During the 1970s, for instance, limiting the income differentials across specialties, particularly for primary care practitioners versus specialists, was the predominant consideration. In more recent years, adjusting the fees to reflect more accurately the work effort required for procedures (both within and across specialties) has received more emphasis. Efforts to redress inequities among fees, however, were not based on formal evaluation of the work content of procedures, such as in the studies conducted by Hsiao Appendix A: Physician Payment in Ontario, (1988a), but on more subjective evaluations by panels of specialists. Though the changes were less dramatic than those that might accompany the introduction of a fee schedule based on a RBRVS in the U.S., it is noteworthy, that there has been an effort to align fees more closely with perceived work effort. In addition, a specialty tariff subcommittee may make an appeal at any time for a special allocation to address a specific grievance. Such special allocations are rare, however, because they reduce the amount of money that can be granted to other specialties (Ontario Medical Association, 1984).

The schedule of fees, then, is determined through complex and delicate negotiations both between the provincial government and the medical association, and among the various specialty sections of the medical association. Though fees are seldom decreased, in any given year the change in fees for specific procedures varies from no increase to increases of two to three times the global rate. This can create large changes in both relative and real fees from year to year, and provides an opportunity to examine how, and to what degree, physicians respond to changes in fees when providing services to patients.

APPENDIX B

PHYSICIAN FEES: TIME, OCCURRENCE AND GLOBAL RATES OF INCREASE

Appendix B: Physician Fees: Time, Occurence and Global Rates of Increase

YEAR	MONTH	NFLD./ T.-N.	P.E.I./ I.P.E.	N.S./ N.-E.	N.B./ N.-B.	QUE./QUE.		ONT./ ONT.	MAN./ MAN.	SASK./ SASK.	ALTA./ ALB.	B.C./ C.-B.	YUKON/ YUKON	N.W.T./ T.N.O.	MOIS	ANNEE
						G.P./ OMNI.	SPEC./ SPEC.									
1974	JANUARY	...	...	1.10	...	...	...	...	6.00	...	...	...	...	...	JANVIER	1974
	APRIL	...	8.20	...	...	...	...	...	...	...	...	7.78	10.00	...	AVRIL	
	MAY	...	...	...	...	...	...	7.75	...	...	...	...	...	...	MAI	
	JUNE	...	...	...	...	...	...	...	...	...	...	0.92	...	...	JUIN	
	JULY	...	...	10.40	...	...	...	...	...	...	...	...	...	4.50	JUILLET	
	AUGUST	...	...	...	3.40	...	...	...	...	...	...	...	...	...	AOUT	
	SEPTEMBER	...	...	...	...	...	...	...	...	10.00	...	...	...	...	SEPTEMBRE	
	OCTOBER	...	...	...	...	...	...	...	...	...	4.00	...	...	...	OCTOBRE	
1975	JANUARY	...	...	...	9.20	...	...	...	5.00	...	...	3.09	...	...	JANVIER	1975
	MARCH	...	...	...	...	...	...	...	...	...	7.20	...	...	...	MARS	
	APRIL	12.00	5.40	12.00	...	...	...	...	...	...	...	12.17	8.00	...	AVRIL	
	MAY	...	...	...	...	...	...	4.00	...	7.00	...	...	...	...	MAI	
	JULY	...	...	...	...	...	...	...	...	...	...	...	...	12.20	JUILLET	
1976	JANUARY	...	...	...	...	...	...	...	9.15	...	9.00	...	...	...	JANVIER	1976
	MARCH	...	...	...	...	...	...	...	...	7.50	...	...	...	...	MARS	
	APRIL	7.50	8.20	8.15	...	...	...	...	...	...	...	8.13	10.10	...	AVRIL	
	MAY	...	...	...	...	...	...	8.10	...	...	...	...	...	...	MAI	
	JULY	...	...	...	...	...	...	...	...	...	...	...	...	8.90	JUILLET	
	AUGUST	...	...	...	7.80	...	...	...	...	...	...	...	...	...	AOUT	
	OCTOBER	...	...	...	...	...	...	...	...	...	...	0.03	...	...	OCTOBRE	
	NOVEMBER	...	...	...	...	15.00	...	...	...	...	...	...	...	...	NOVEMBRE	
1977	JANUARY	...	...	...	...	...	17.50	...	7.00	5.50	7.00	...	...	...	JANVIER	1977
	APRIL	...	6.40	4.00	...	...	...	...	...	...	...	5.53	8.15	...	AVRIL	
	MAY	...	...	...	...	...	...	6.50	...	...	...	...	...	...	MAI	
	JULY	...	...	...	...	...	...	...	...	...	...	...	...	8.00	JUILLET	
	AUGUST	...	...	...	6.30	...	...	...	...	...	...	...	...	...	AOUT	
	NOVEMBER	...	...	...	...	6.20	...	...	...	...	...	...	...	...	NOVEMBRE	

Appendix B: Physician Fees: Time, Occurence and Global Rates of Increase, continued...

YEAR	MONTH	NFLD./ T.-N.	P.E.I./ I.P.E.	N.S./ N.-E.	N.B./ N.-B.	QUE./QUE. O.P./ OMNI.	QUE./QUE. SPEC./ SPEC.	ONT./ ONT.	MAN./ MAN.	SASK./ SASK.	ALTA./ ALB.	B.C./ C.-B.	YUKON/ YUKON	N.W.T./ T.N.O.	MOIS	ANNEE
1978	JANUARY	6.10	...	...	...	...	...	...	...	6.49	6.47	...	...	...	JANVIER	1978
	APRIL	...	...	6.27	...	...	...	...	7.05	...	...	7.20	8.10	...	AVRIL	
	MAY	...	...	...	...	...	...	6.25	...	...	...	...	...	...	MAI	
	JUNE	...	7.72	...	...	...	...	...	...	...	...	...	...	...	JUIN	
	JULY	...	...	...	...	...	...	...	...	...	...	...	...	8.10	JUILLET	
	AUGUST	...	...	...	5.96	...	...	...	...	...	...	...	...	...	AOUT	
	OCTOBER	...	...	...	...	...	5.50	...	...	...	...	...	...	...	OCTOBRE	
	NOVEMBER	...	...	...	...	5.20	...	...	...	...	...	...	...	...	NOVEMBRE	
1979	JANUARY	...	...	...	...	...	...	6.60	...	8.40	7.00	...	...	...	JANVIER	1979
	APRIL	8.00	...	7.50	11.00	...	...	...	8.10	...	...	8.11	9.50	...	AVRIL	
	JUNE	...	9.00	...	...	...	...	...	...	...	...	...	...	...	JUIN	
	JULY	...	...	...	...	...	...	...	...	...	...	...	...	8.75	JUILLET	
1980	JANUARY	...	...	...	...	...	...	11.50	...	7.24	15.50	...	...	...	JANVIER	1980
	MARCH	...	...	...	...	...	...	...	...	4.09	...	...	...	...	MARS	
	APRIL	15.00	12.00	10.80	8.00	...	...	...	12.30	2.72	...	9.70	8.70	...	AVRIL	
	MAY	...	...	...	...	...	...	...	...	...	...	...	...	...	MAI	
	JULY	...	...	...	...	...	...	...	...	0.52	...	...	...	11.00	JUILLET	
	SEPTEMBER	...	...	...	...	...	7.00	...	...	...	...	...	...	...	SEPTEMBRE	
	OCTOBER	...	...	...	...	...	...	...	...	0.11	...	...	...	...	OCTOBRE	
1981	JANUARY	...	...	...	...	...	...	...	...	4.03	...	...	...	...	JANVIER	1981
	FEBRUARY	...	...	...	...	10.50	...	...	...	...	...	...	...	...	FEVRIER	
	MARCH	...	...	...	...	...	...	...	...	...	15.40	...	...	...	MARS	
	APRIL	9.00	9.50	12.00	17.00	...	...	14.75	15.50	5.03	...	14.50	18.50	...	AVRIL	
	JUNE	...	...	...	...	...	...	...	...	0.34	...	...	...	...	JUIN	
	JULY	...	...	...	...	...	...	...	...	...	...	...	...	12.50	JUILLET	
	AUGUST	...	...	...	...	...	...	...	...	0.79	...	7.25	...	...	AOUT.	
	OCTOBER	6.00	...	...	0.50	...	...	...	...	...	...	...	...	...	OCTOBRE	
	NOVEMBER	...	...	...	...	...	...	...	...	12.56	...	...	...	...	NOVEMBRE	

Appendix B: Physician Fees: Time, Occurence and Global Rates of Increase, continued...

YEAR	MONTH	NFLD./ T.-N.	P.E.I./ I.P.E.	N.S./ N.-E.	N.B./ N.-B.	QUE./ G.P./ OMNI.	QUE. SPEC./ SPEC.	ONT./ ONT.	MAN./ MAN.	SASK./ SASK.	ALTA./ ALB.	B.C./ C.-B.	YUKON/ YUKON	N.W.T./ T.N.O.	MOIS	ANNEE
1982	JANUARY	...	...	...	...	...	...	...	...	3.63	13.88	...	...	...	JANVIER	1982
	APRIL	7.00	...	12.00	16.60	...	...	11.00	10.53	3.96	...	14.00	15.50	...	AVRIL	
	MAY	...	...	...	...	...	...	...	...	0.42	...	...	...	...	MAI	
	JUNE	...	15.50	...	...	...	...	...	...	...	...	...	...	...	JUIN	
	JULY	...	...	...	...	...	...	...	...	...	4.12	...	...	15.00	JUILLET	
	AUGUST	...	...	1.34	...	...	...	...	...	...	...	...	...	...	AOUT	
	SEPTEMBER	...	...	...	...	11.30	...	...	...	...	...	-6.81	...	...	SEPTEMBRE	
	OCTOBER	...	...	...	0.20	...	...	...	...	...	...	...	...	...	OCTOBRE	
	NOVEMBER	5.00	...	...	...	...	11.40	...	...	...	...	...	...	...	NOVEMBRE	
	DECEMBER	...	...	1.32	...	...	...	...	...	...	...	...	...	...	DECEMBRE	
1983	JANUARY	...	...	...	...	...	...	3.00	...	4.00	5.00	...	...	...	JANVIER	1983
	FEBRUARY	...	...	...	...	...	...	...	...	1.70	...	...	...	...	FEVRIER	
	APRIL	...	2.00	6.00	5.20	...	...	8.75	3.44	...	...	11.82	7.49	...	AVRIL	
	JUNE	...	...	...	...	...	...	...	...	0.70	...	...	...	...	JUIN	
	JULY	...	...	...	...	...	...	...	...	...	...	...	...	...	JUILLET	
	SEPTEMBER	...	...	...	...	...	...	...	...	-0.43	...	...	...	...	SEPTEMBRE	
	NOVEMBER	4.00	...	...	...	6.51	...	...	...	...	...	...	...	6.24	NOVEMBRE	
1984	JANUARY	...	...	...	...	...	...	3.00	...	...	0.00	...	...	...	JANVIER	1984
	FEBRUARY	...	...	...	...	...	...	...	...	4.82	...	...	...	...	FEVRIER	
	MARCH	...	...	...	...	...	...	...	...	0.16	...	...	...	...	MARS	
	APRIL	...	3.00	5.00	0.00	...	...	5.00	2.00	...	...	0.00	6.71	...	AVRIL	
	JUNE	...	...	...	...	...	...	...	...	...	...	...	...	...	JUIN	
	JULY	...	...	3.53	...	...	5.60	...	...	...	...	...	...	5.00	JUILLET	
	AUGUST	0.69	...	...	...	...	...	...	...	...	...	...	...	...	AOUT	
	NOVEMBER	0.00	...	...	...	5.15	...	...	...	...	...	...	...	...	NOVEMBRE	
1985	JANUARY	...	...	...	...	...	...	3.00	...	0.69	0.00	...	...	...	JANVIER	1985
	FEBRUARY	...	...	...	...	...	5.30	...	...	...	...	...	...	...	FEVRIER	
	APRIL	...	...	4.27	5.00	...	...	3.00	2.00	...	...	0.00	3.25	...	AVRIL	
	JUNE	...	...	...	...	...	...	...	...	...	...	...	...	...	JUIN	
	JULY	...	4.75	...	...	0.28	...	...	...	...	...	...	...	2.50	JUILLET	
	NOVEMBER	0.00	...	...	...	0.94	...	...	...	...	...	...	...	...	NOVEMBRE	

Appendix B: Physician Fees: Time, Occurence and Global Rates of Increase, continued...

YEAR	MONTH	NFLD./ T.-N.	P.E.I./ I.P.E.	N.S./ N.-E.	N.B./ N.-B.	QUE./QUE.		ONT./ ONT.	MAN./ MAN.	SASK./ SASK.	ALTA./ ALB.	B.C./ C.-B.	YUKON/ YUKON	N.W.T./ T.N.O.	MOIS	ANNEE
						G.P./ OMNI.	SPEC./ SPEC.									
1986	JANUARY	0.75	...	...	...	...	...	4.00	...	4.70	...	...	...	...	JANVIER	1986
	MARCH	...	...	...	...	...	...	...	...	...	...	...	...	2.00	MARS	
	APRIL	...	2.00	2.00	3.00	...	...	3.00	5.60	...	4.65	...	3.96	...	AVRIL	
	JUNE	...	2.94	...	...	2.13	...	...	...	...	...	...	...	...	JUIN	
	JULY	...	...	...	...	...	...	...	...	...	...	...	...	2.00	JUILLET	
	OCTOBER	...	...	...	...	...	...	...	...	5.10	1.52	2.00	...	...	OCTOBRE	
	NOVEMBER	6.00	...	...	...	3.50	...	...	...	...	...	...	...	2.00	NOVEMBRE	
1987	JANUARY	...	...	...	...	...	...	4.00	...	*	...	...	...	...	JANVIER	1987
	FEBRUARY	...	...	...	...	...	...	...	...	...	...	...	...	...	FEVRIER	
	APRIL	...	4.00	3.00	2.00	...	...	4.83	3.50	...	0.00	2.42	...	...	AVRIL	
	JUNE	...	...	...	...	...	6.23	...	...	...	...	...	...	...	JUIN	
	JULY	...	...	...	...	...	...	...	...	...	...	...	1.20	4.00	JUILLET	
	OCTOBER	...	...	...	...	...	0.37	...	...	...	...	-4.00	...	...	OCTOBRE	
	NOVEMBER	7.00	...	...	...	...	...	...	...	...	...	...	...	...	NOVEMBRE	
1988	FEBRUARY	...	...	...	...	...	...	...	...	...	...	4.17	...	...	FEVRIER	1988
	APRIL	...	4.00	4.40	...	...	...	...	3.90	...	1.50	3.00	...	...	AVRIL	
	MAY	...	...	...	1.90	...	...	...	...	...	...	...	...	...	MAI	
	JUNE	...	...	...	...	10.25	4.36	...	...	...	...	...	...	...	JUIN	
	OCTOBER	...	...	...	2.00	...	...	...	...	...	...	...	...	...	OCTOBRE	
	NOVEMBER	7.00	...	...	...	...	...	...	...	...	...	...	...	...	NOVEMBRE	

Source: Payment Schedule Increases: Health Information Division, National Health and Welfare, September 1988

APPENDIX C

CONSULTATIONS AND VISITS THAT COMPRISE THE SPECIALTY BUNDLES

APPENDIX C

CONSULTATIONS AND VISITS THAT COMPRISE THE SPECIALTY BUNDLES

GP/FP

Office-Based		Hospital-Based	
A001	Minor Assessment	C002	Subseq. Visits - to 5 Wks.
A002	Well Baby Care (up to 2nd Birthday)	C003	General Assessment
A003	General Assessment	C004	General Re-Assessment
A004	General Re-Assessment	C005	Consultation
A005	Consultation	C006	Repeat Consultation
A006	Repeat Consultation		
A007	Intermediate Assessment/Well Baby Care		

DERMATOLOGY

A021	Minor Assessment	C022	Subseq. Visits - to 5 Wks.
A023	Specific Assessment	C023	Specific Assessment
A024	Specific Re-Assessment/ Partial Assessment	C024	Specific Re-Assessment/Partial Assessment
A025	Consultation	C025	Consultation
A026	Repeat Consultation	C026	Repeat Consultation

GENERAL SURGERY

A031	Minor Assessment	C032	Subseq. Visits - to 5 Wks.
A033	Specific Assessment	C033	Specific Assessment
A034	Specific Re-Assessment/ Partial Assessment	C034	Specific Re-Assessment/Partial Assessment
A035	Consultation	C035	Consultation
A036	Repeat Consultation	C036	Repeat Consultation

ORTHOPEDIC SURGERY

A061	Minor Assessment	C062	Subseq. Visits - to 5 Wks.
A063	Specific Assessment	C063	Specific Assessment
A064	Specific Re-Assessment/ Partial Assessment	C064	Specific Re-Assessment/Partial Assessment
A065	Consultation	C065	Consultation
A066	Repeat Consultation	C066	Repeat Consultation

CARDIOVASCULAR & THORACIC SURGERY

A091	Minor Assessment	C092	Subseq. Visits - to 5 Wks.
A093	Specific Assessment	C093	Specific Assessment
A094	Specific Re-Assessment/ Partial Assessment	C094	Specific Re-Assessment/Partial Assessment
A095	Consultation	C095	Consultation
A096	Repeat Consultation	C096	Repeat Consultation

INTERNAL MEDICINE

A131	Minor Assessment	C132	Subseq. Visits - to 5 Wks.
A133	General Assessment	C133	General Assessment
A134	General Re-Assessment	C134	General Re-Assessment
A135	Consultation	C135	Consultation
A136	Repeat Consultation	C136	Repeat Consultation

APPENDIX C (continued ...)

A138	Specific Re-Assessment/ Partial Assessment	C435	Limited Consultation
A435	Limited Consultation		

PSYCHIATRY

A191	Minor Assessment	C192	Subseq. Visits - to 5 Wks.
A193	Specific Assessment	C193	Specific Assessment
A194	Specific Re-Assessment/ Partial Assessment	C194	Specific Re-Assessment/Partial Assessment
A195	Consultation	C195	Consultation
A196	Repeat Consultation	C196	Repeat Consultation

OBSTETRICS/GYNECOLOGY

A201	Minor Assessment	C202	Subseq. Visits - to 5 Wks.
A203	Specific Assessment	C203	Specific Assessment
A204	Specific Re-Assessment/ Partial Assessment	C204	Specific Re-Assessment/Partial Assessment
A205	Consultation	C205	Consultation
A206	Repeat Consultation	C206	Repeat Consultation

OPHTHALMOLOGY

A231	Minor Assessment	C232	Subseq. Visits - to 5 Wks.
A233	Specific Assessment	C233	Specific Assessment
A234	Specific Re-Assessment/ Partial Assessment	C234	Specific Re-Assessment/Partial Assessment
A235	Consultation	C235	Consultation
A236	Repeat Consultation	C236	Repeat Consultation

OTOLARYNGOLOGY

A241	Minor Assessment	C242	Subseq. Visits - to 5 Wks.
A243	Specific Assessment	C243	Specific Assessment
A244	Specific Re-Assessment/ Partial Assessment	C244	Specific Re-Assessment/Partial Assessment
A245	Consultation	C245	Consultation
A246	Repeat Consultation	C246	Repeat Consultation

DIAGNOSTIC RADIOLOGY

A335	Consultation	C335	Consultation - Non. Emerg.

RADIATION ONCOLOGY

A340	General Re-Assessment	C340	General Re-Assessment
A341	Minor Assessment (until Dec. 1982)	C341	General Assessment
A341	General Assessment (beginning April 1987)	C342	Subseq. Visits - to 5 Wks.
A343	Specific Assessment	C343	Specific Assessment
A344	Specific Re-Assessment/ Partial Assessment	C344	Specific Re-Assessment/Partial Assessment
A345	Consultation	C345	Consultation
A346	Repeat Consultation	C346	Repeat Consultation
A745	Limited Consultation		

APPENDIX D

DATA SOURCES

APPENDIX D

DATA SOURCES

Utilization

Source: unpublished, Health Information Division (HID), Health and Welfare Canada.

Fees

Source: 1975-1977, Schedule of Fees, Ontario Medical Association.
1978-1987, Schedule of Fees, Ontario Ministry of Health.

Physician Supply

- total number of active civilian physicians, excluding interns and residents
- total number of family practitioners and general practitioners
- total number of internists
- total number of dermatologists
- total number of psychiatrists
- total number of general surgeons
- total number of cardiovascular and thoracic surgeons
- total number of obstetricians and gynecologists
- total number of ophthalmologists
- total number of otolaryngologists
- total number of orthopedic surgeons
- total number of anesthetists
- total number of physicians specializing in nuclear medicine
- total number of physicians in specializing therapeutic radiology

Source: General Practitioners, Family Practitioners, and Specialists by Specialty Grouping, Canada and Provinces, HID, Health and Welfare Canada.

Nurse Supply

total number of nurses employed in public general hospitals, March 31 of each year, expressed in terms of full-time equivalents based on 1,950 hours per year.

This category includes: (i) directors and supervisors, (ii) graduate nurses, (iii) qualified nursing assistants, and (iv) other nursing personnel

Source: Hospital Statistics, Ontario Ministry of Health.

Other Health Personnel

- number of registered radiological technicians employed in public general hospitals, March 31 of each year, expressed as full-time equivalents based on 1,950 hours per year

Source: Hospital Statistics, Ontario Ministry of Health.

Bed Supply

- total number of staffed beds (beds in operation at a given time) in acute care units
- total number of staffed beds in medical/surgical units
- total number of staffed beds in psychiatric units
- total number of staffed beds in obstetrical units
- occupancy rate of staffed beds in acute care units

Source: Hospital Statistics, Ontario Ministry of Health.

Life Expectancy

- average life expectancy at birth, male and female
- average life expectancy at birth, female
- average life expectancy at birth, male

Source: Mortality Summary List of Causes, Statistics Canada, (84-206)

Unemployment

- quarterly average of seasonally adjusted monthly unemployment rate

Source: Historical Labour Force Statistics, Statistics Canada, (71-201)

Education

- percentage of population age 15 and over without any secondary school education

Source: The Labour Force, Statistics Canada, (71-001)

Income

- personal income per capita

Source: System of National Accounts, National Income and Expenditures Annual Estimates, Statistics Canada, (13-201)

Population

- figures are in thousands, by sex and five-year age groups

Source: (1) Annual Estimates of Population by Marital Status, Age, and Sex for Canada and the Provinces, (2) Postcensal Annual Estimates of Population by Marital Status, Age, Sex and Components of Growth for Canada and the Provinces, Statistics Canada, (91-519, 91-210)

Consumer Price Index

- Toronto all-items consumer price index

Source: Historical Statistical Supplement, 1987, Statistics Canada

APPENDIX E

REGRESSION COEFFICIENTS AND ELASTICITIES FOR THE UTILIZATION PER PHYSICIAN SPECIFICATIONS

TABLE E.1: REGRESSION COEFFICIENTS AND ELASTICITIES FOR RELATIVE FEE VARIABLE - DEPENDENT VARIABLE

UTILIZATION PER PHYSICIAN:

Positive and Statistically Significant Response

		Fee Coefficient	Elasticity
E140	Cataract Excision, all types	1.069**	1.057
S063	Tonsillectomy (SP)	6.475**	0.761

Negative and Statistically Significant Response

		Fee Coefficient	Elasticity
G313	Electrocardiogram, Professional Component (SP)	-373.370**	-0.639
J162	Diagnostic Ultrasound (Pelvic)	-38.517*	-0.336
R742	Coronary Artery Repair	-0.083**	-1.391
R792	Carotid Endarterectomy	-8.217E-03**	-0.581
S287	Cholecystectomy (SP)	-0.067**	-0.184
S754	Diagnostic Curettage (GP/FP)	-0.029**	-0.322
R837	Ligation and Avulsion, Veins (SP)	-0.194**	-0.720

Non-Statistically Significant Response

		Fee Coefficient	Elasticity
C002	Subsequent Hospital Visit, GP/FP	4.355	0.033
G313	Electrocardiogram, Professional Component (GP/FP)	1.320	0.036
K013	Counselling, GP/FP	2.276	0.466
K195	Family Therapy	0.785	0.028
S323	Herniotomy (GP/FP)	1.756E-03	0.206
S323	Herniotomy (SP)	0.037	0.081
S757	Hysterectomy (SP)	0.015	0.027
Z327	Bronchoscopy	0.160	0.202
A345	Consultation - Radiation Oncology	-0.475	-0.024
C062	Subsequent Hospital Visit -Orthopedic Surgery	-6.294	-0.044
J135	Diagnostic Ultrasound (Abdominal)	-0.759	-5.811E-03
K007	Individual Psychotherapy, GP/FP	-0.256	-0.012
K009	Annual Health Exam, >14 yrs.	-0.823	-0.102
K197	Individual Psychotherapy (Psychiatry)	-26.540	-0.079
S063	Tonsillectomy (GP/FP)	-8.877E-03	-0.156
S205	Appendectomy (SP)	-1.706E-02	-0.046
S247	Hemorrhoidectomy (SP)	-0.021	-0.100
S754	Diagnostic Curettage (SP)	-0.419	-0.067
S655	Endoscopy, TURP (SP)	-0.037	-0.156

+ evaluated at mean values
* significant at 10% level
** significant at 5% level

TABLE E.2: REGRESSION COEFFICIENTS AND ELASTICITIES FOR REAL FEE VARIABLE - DEPENDENT VARIABLE

UTILIZATION PER PHYSICIAN

Positive and Statistically Significant Response

		Fee Coefficient	Elasticity
E140	Cataract Excision, all types	0.052***	1.109
K195	Family Therapy	0.570**	0.428
S063	Tonsillectomy (SP)	0.240**	0.588

Negative and Statistically Significant Response

		Fee Coefficient	Elasticity
R837	Ligation and Avulsion, Veins (SP)	-0.020**	-1.295
S205	Appendectomy (SP)	-4.145E-03*	-0.183
S287	Cholecystectomy (SP)	-5.925E-03**	-0.265
S754	Diagnostic Curettage (GP/FP)	-1.582E-03**	-0.347

Non-Statistically Significant Response

		Fee Coefficient	Elasticity
A345	Consultation, Radiation Oncology	0.172	0.121
C002	Subsequent Hospital Visit, GP/FP	1.009	0.098
G313	Electrocardiogram, Professional Component (GP/FP)	0.026	0.016
K013	Counselling, GP/FP	0.073	0.188
K197	Individual Psychotherapy (Psychiatry)	0.354	0.022
R742	Coronary Artery Repair	4.157E-04	0.127
R792	Carotid Endarterectomy	1.434E-05	0.017
S063	Tonsillectomy (GP/FP)	4.831E-05	0.018
S323	Herniotomy (SP)	1.040E-03	0.038
S655	Endoscopy, TURP (SP)	1.690E-03	0.118
S757	Hysterectomy (SP)	1.678E-03	0.058
Z327	Bronchoscopy	0.005	0.110
C062	Subsequent Hospital Visit - Orthopedic Surgery	-0.497	-0.073
G313	Electrocardiogram, Professional Component (SP)	-0.223	-8.663E-03
J135	Diagnostic Ultrasound (Abdominal)	-0.697	-0.088
J162	Diagnostic Ultrasound (Pelvic)	-1.017	-0.146
K007	Individual Psychotherapy, GP/FP	-0.095	-0.057
K009	Annual Health Exam, age >14	-0.053	-0.085
S754	Diagnostic Curettage (SP)	-0.029	-0.091
S247	Hemorrhoidectomy (SP)	-1.657E-03	-0.133
S323	Herniotomy (GP/FP)	-1.845E-03	-0.370

+ evaluated at mean values

* significant at 10% level

** significant at 5% level

TABLE E.3: RESULTS OF FEE DUMMY VARIABLE REGRESSIONS - DEPENDENT VARIABLE

UTILIZATION PER PHYSICIAN

Statistically Significant Response to a One-Time, Large Relative Fee Decrease

		Coefficient	One-Time % Change in Relative Fee	Implied % the Change in Utilization
R792	Carotid Endarterectomy	0.075^{**}	-20	+25
S205	Appendectomy (SP)	0.017^{**}	-26	+ 5
S754	Diagnostic Curettage (GP/FP)	-0.028^{**}	-30	- 6
S754	Diagnostic Curettage (SP)	0.927^{*}	-35	+ 4
R837	Ligation and Avulsion, Veins (SP)	0.569^{**}	-30	+43
K195	Family Therapy	6.310^{**}	+20	+17
G313	Electrocardiogram, Professional Component (GP/FP)	-0.375^{*}	+29	- 5

Non-Statistically Significant Response to a One-Time, Large Relative Fee Change

		Coefficient	One-Time % Change in the Relative Fee	Implied % Change in Utilization
A345	Consultation - Radiation Oncology	1.781	+34	+ 3
C062	Subsequent Hospital Visit - Orthopedic Surgery	-0.964	+25	- 2
R742	Coronary Artery Repair	0.471	-20	+26
S247	Hemorrhoidectomy (SP)	0.060	-27	+ 4
S287	Cholecystectomy (SP)	0.205	-23	+ 4
S323	Herniotomy (SP)	-0.146	-23	- 3
S655	Endoscopy, TURP (SP)	0.175	-21	+ 5

---

* significant at 10% level
** significant at 5% level

APPENDIX F

FULL REGRESSION RESULTS:
UTILIZATION PER CAPITA SPECIFICATIONS

NOTES TO APPENDIX F

DEPENDENT VARIABLE

UTILP: Utilization per capita

INDEPENDENT VARIABLE

(See text, Table III.)

SUMMARY STATISTICS

S.E.E. : Standard Error of Estimate

D.F. : Degrees of Freedom

@ : indicates that the equation was estimated correcting for first-order autocorrelation (otherwise, the equation was estimated correcting for fourth- order autocorrelation).

* : indicates that the coefficient is statistically significant at the 10% level.

** : indicates that the coefficient is statistically significant at the 5% level.

A345 - CONSULTATION, RADIATION ONCOLOGY FEE VARIABLE: RELATIVE FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3
SPPOP	22.676	22.485	23.936
	(2.764) **	(4.294) **	(4.158) **
	0.389	0.386	0.410
TECHP			
BEDMSP	0.063	0.047	0.017
	(1.353)	(1.235)	(0.432)
	0.575	0.426	0.156
PCT60	-4.522	-3.976	
	(-1.696) *	(-2.222) **	
	-1.872	-1.646	
URATE	3.322E-03	0.004	1.672E-03
	(1.172)	(1.824) *	(0.812)
	0.072	0.081	0.036
DPCI	-4.806E-06		
	(-0.250)		
	-0.179		
RELFEE	-1.721E-03	-0.002	-9.050E-03
	(-0.114)	(-0.127)	(-0.628)
	-0.149	-0.015	-0.078
T	3.260E-03	2.436E-03	-6.966E-04
	(1.470)	(1.551)	(-1.051)
	0.256	0.191	-0.055
Q1	9.658E-04		
	(0.119)		
Q2	0.015	0.015	0.013
	(2.099) **	(2.834) **	(2.454) **
Q4	-4.166E-03		
	(-0.581)		
EBD	0.022	0.022	0.032
	(1.543)	(1.644)	(2.347) **
CONSTANT	0.605	0.536	0.174
	(2.605) **	(2.790) **	(1.436)
R-BAR SQUARED	0.493	0.522	0.479
S.E.E.	0.017	0.017	0.017
DURBIN-WATSON	1.763	1.795	1.772
D.F.	34	37	38

A345 - CONSULTATION, RADIATION ONCOLOGY FEE VARIABLE: REAL FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3
SPPOP	20.991	19.192	19.608
	(2.656) **	(3.509) **	(2.748) **
	0.360	0.329	0.336
TECHP			
BEDMSP	0.028	8.993E-03	-0.042
	(0.471)	(-0.177)	(-0.654)
	0.251	8.159E-02	-0.378
PCT60	-4.997	-4.903	
	(-1.931) *	(-2.932) **	
	-2.069	-2.030	
URATE	4.535E-03	5.539E-03	2.704E-03
	(1.565)	(2.747) **	(1.077)
	0.099	0.120	0.059
DPCI	-7.307E-06		
	(-0.399)		
	-0.271		
DFEE	6.783E-04	1.107E-03	1.045E-03
	(0.851)	(2.323) **	(1.686) *
	0.082	0.134	0.126
T	3.099E-03	2.206E-03	-1.468E-03
	(1.437)	(1.374)	(-1.428)
	0.243	0.173	-0.115
Q1	2.093E-03		
	(0.262)		
	1.430E-03		
Q2	0.015	0.015	0.012
	(2.158) **	(2.748) **	(2.314) **
	0.011	0.011	9.106E-03
Q4	-3.661E-03		
	(-0.526)		
	-2.710E-03		
EBD	0.011		
	(0.704)		
	4.216E-03		
CONSTANT	0.789	0.807	0.331
	(2.636) **	(3.753) **	(1.592)
R-BAR SQUARED	0.502	0.533	0.466
S.E.E.	0.017	0.016	0.018
DURBIN-WATSON	1.752	1.752	1.687
D.F.	34	38	39

```
C002 - SUBSEQUENT HOSPITAL VISIT, GP/FP     FEE VARIABLE: RELATIVE FEE
DEPENDENT VARIABLE: UTILP

VARIABLE      EQUATION 1     EQUATION 2      EQUATION 3     EQUATION 4
------------------------------------------------------------------------
SPPOP            -5.116                          6.496
               (-0.385)                        (0.368)
                 -0.062                          0.078

NURSHP           18.117         16.198
                (4.819) **     (7.933) **
                  1.476          1.320

BEDTAP            6.671          7.141          18.445         19.357
                (2.483) **     (2.976) **      (5.970) **     (7.339) **
                  0.401          0.430           1.110          1.165

PCT60          -201.470
               (-0.923)
                 -0.406

URATE            -0.307         -0.244          -0.050
               (-2.454) **    (-2.718) **     (-0.237)
                 -0.032         -0.026      -5.313E-03

DPCI         -3.043E-04
               (-0.400)
                 -0.055

RELFEE          -11.053        -16.727           4.956          4.087
               (-1.265)       (-2.828) **      (0.377)        (0.428)
                 -0.100         -0.151           0.045          0.037

T                -0.339         -0.481          -0.299         -0.262
               (-2.717) **    (-8.888) **     (-3.193) **    (-4.237) **
                 -0.127         -0.181          -0.112         -0.098

Q1                8.862          8.406           7.761          7.830
               (12.840) **    (14.727) **     (11.210) **    (11.727) **

Q2                4.862          4.688           4.752          4.799
                (7.753) **     (7.593) **      (6.445) **     (6.537) **

Q4                5.352          5.448           5.273          5.218
                (8.621) **     (8.841) **      (7.141) **     (7.102) **

EBD              -0.121
               (-0.114)

CONSTANT        -11.509        -32.317         -12.443        -11.576
                (0.691)       (-4.943) **     (-0.881)       (-0.943)

------------------------------------------------------------------------
R-BAR SQUARED     0.989          0.990           0.982          0.983
S.E.E.            0.976          0.947           1.239          1.216
DURBIN-WATSON     1.894          1.806           1.607          1.601
D.F.                 34             38              38             40
```

C0G2 - SUBSEQUENT HOSPITAL VISIT, GP/FP FEE VARIABLE: REAL FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3	EQUATION 4
SPPOP	-10.472		-0.191	
	(-0.810)		(-0.011)	
	-0.126		-2.297E-03	
NURSHP	17.746	16.415		
	(4.683) **	(7.603) **		
	1.446	1.337		
BEDTAP	6.594	6.601	16.524	16.961
	(2.390) **	(2.620) **	(4.899) **	(5.451) **
	0.397	0.397	0.994	1.020
PCT60	-202.660			
	(-0.905)			
	-0.408			
URATE	-0.390	-0.365	-0.076	
	(-3.601) **	(-4.714) **	(-0.416)	
	-0.041	0.039	-7.981E-03	
DPCI	-4.937E-04			
	(-0.653)			
	-0.089			
DFEE	-0.237	-0.614	0.861	0.788
	(-0.609)	(-2.118) **	(1.363)	(1.450)
	-0.027	-0.071	0.099	0.091
T	-0.324	-0.484	-0.366	-0.355
	(2.577) **	(-7.943) **	(-3.502) **	(-4.055) **
	-0.121	-0.182	-0.137	-0.133
Q1	8.861	8.242	8.020	8.007
	(12.474) **	(15.051) **	(11.773) **	(12.639) **
Q2	4.868	4.668	4.692	4.710
	(7.844) **	(7.795) **	(6.725) **	(6.872) **
Q4	5.360	5.465	5.326	5.317
	(8.732) **	(9.113) **	(7.598) **	(7.714) **
EBD	0.225			
	(0.223)			
CONSTANT	-6.845	-35.945	-0.532	-2.793
	(-0.351)	(-4.015) **	(-0.032)	(-0.211)
R-BAR SQUARED	0.989	0.989	0.983	0.984
S.E.E.	0.993	0.098	1.218	1.193
DURBIN-WATSON	1.927	1.837	1.620	1.619
D.F.	34	38	38	40

C062 - SUBSEQUENT HOSPITAL VISIT, ORTHO SURG FEE VARIABLE: RELATIVE FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION2	EQUATION 3	EQUATION 4
SPPOP	-19.518		-13.150	-37.288
	(-0.658)		(-0.716)	(-2.312) **
	-0.340		-0.229	-0.650
NURSHP	-0.333	-0.507	-0.423	
	(-1.013)	(-3.872) **	(-2.442) **	
	-1.134	-1.725	-1.439	
BEDMSP	0.773	0.680	0.720	0.500
	(3.049) **	(3.477) **	(3.467) **	(2.165) **
	1.432	1.260	1.333	0.926
PCT60	-2.456			
	(-0.144)			
	-0.207			
URATE	0.022	0.028	0.025	0.019
	(2.382) **	(5.070) **	(3.890) **	(2.572) **
	0.095	0.124	0.112	0.082
DPCI	-2.001E-05			
	(-0.316)			
	-0.151			
RELFEE	0.267	0.405	0.363	6.092E-03
	(0.523)	(1.029)	(0.907)	(0.014)
	0.063	0.096	0.086	1.441E-03
T	0.018	0.011	0.014	0.015
	(1.765) *	(3.618) **	(2.965) **	(2.870) **
	0.288	0.179	0.216	0.230
Q1	0.028			
	(0.642)			
Q2	0.088	0.079	0.076	0.061
	(3.568) **	(4.339) **	(4.044) **	(3.016) **
Q4	0.046	0.049	0.042	0.026
	(1.832) *	(2.694) **	(1.974) *	(1.181)
EBD	-8.658E-03			
	(-0.109)			
CONSTANT	1.576	1.772	1.530	0.674
	(1.158)	(3.344) **	(2.405) **	(1.185)
R-BAR SQUARED	0.573	0.609	0.605	0.567
S.E.E.	0.065	0.062	0.062	0.065
DURBIN-WATSON	2.074	2.070	2.080	1.994
D.F.	34	39	38	39

C062 - SUBSEQUENT HOSPITAL VISIT, ORTHO SURG FEE VARIABLE: REAL FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3
SPPOP	-19.380		-36.769
	(-0.658)		(-2.340) **
	-0.338		-0.641
NURSHP	-0.287		
	(-0.919)		
	-0.976		
BEDMSP	0.756	0.249	0.587
	(2.567) **	(0.807)	(2.013) **
	1.399	0.461	1.088
PCT60	-2.737		
	(-0.159)		
	-0.230		
URATE	0.022	0.024	0.019
	(2.419) **	(2.996) **	(3.151) **
	0.099	0.108	0.083
DPCI	-1.635E-05		
	(-0.254)		
	-0.123		
DFEE	4.089E-03	-0.012	-7.094E-03
	(0.217)	(-0.582)	(-0.409)
	0.020	-0.062	-0.036
T	0.019	7.004E-03	0.016
	(1.799) *	(1.376)	(2.810) **
	0.294	0.110	0.254
Q1	0.033		
	(0.746)		
Q2	0.089	0.064	0.064
	(3.667) **	(3.137) **	(3.078) **
Q4	0.045	0.046	0.026
	(1.825) *	(2.325) **	(1.162)
EBD	-0.193		
	(-0.247)		
CONSTANT	1.408	0.622	0.404
	(0.896)	(0.645)	(0.510)
R-BAR SQUARED	0.571	0.545	0.569
S.E.E.	0.065	0.666	0.065
DURBIN-WATSON	2.077	1.953	2.002
D.F.	34	40	39

E140 - CATARACT EXCISION, ALL TYPES FEE VARIABLE: RELATIVE FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3
SPPOP	189.310	206.900	207.550
	(2.356) **	(2.890) **	(3.102) **
	2.005	2.192	2.199
NURSHP	0.999	-0.073	
	(1.229)	(-0.151)	
	1.719	-0.125	
BEDMSP	1.233	1.785	1.709
	(1.328)	(2.096) **	(2.447) **
	1.155	1.671	1.600
PCT60	-48.902		
	(-0.871)		
	-2.080		
URATE	-0.026		
	(-0.680)		
	-0.057		
DPCI	1.732E-04		
	(0.917)		
	0.661		
RELFEE	0.213	0.244	0.243
	(2.141) **	(2.526) **	(2.713) **
	0.851	0.978	0.974
T	0.010	0.853	0.084
	(2.616) **	(4.951) **	(6.172) **
	0.792	0.676	0.666
Q1	0.523	0.427	0.430
	(4.625) **	(6.694) **	(7.472) **
Q2	0.597	0.582	0.581
	(9.582) **	(10.946) **	(11.436) **
Q4	0.387	0.417	0.418
	(6.419) **	(7.908) **	(8.272) **
EBD	-0.242	6.647E-03	
	(-1.128)	(0.465)	
CONSTANT	-13.880	-15.048	-15.202
	(-3.047) **	(-7.159) **	(-8.645) **
R-BAR SQUARED	0.960	0.961	0.962
S.E.E.	0.172	0.172	0.168
DURBIN-WATSON	2.110	2.055	2.059
D.F.	34	37	39

E140 - CATARACT EXCISION, ALL TYPES FEE VARIABLE: REAL FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3
SPPOP	32.470		72.321
	(0.373)		(0.899)
	0.344		0.766
NURSHP	0.475		
	(0.634)		
	0.817		
BEDMSP	0.084		0.610
	(0.098)		(0.758)
	0.079		0.571
PCT60	-0.428		
	(-0.086)		
	-0.018		
URATE	-0.027	-0.017	-0.019
	(-1.016)	(-1.108)	(-1.147)
	-0.060	-0.039	-0.043
DPCI	-2.581E-05		
	(-0.127)		
	-0.099		
DFEE	0.012	0.015	0.012
	(3.285) **	(18.970) **	(3.441) **
	1.040	1.270	0.989
T	0.079	0.089	0.083
	(2.582) **	(37.568) **	(8.335) **
	0.626	0.705	0.655
Q1	0.581	0.582	0.544
	(5.197) **	(10.008) **	(7.581) **
Q2	0.578	0.591	0.584
	(9.103) **	(11.230) **	(10.681) **
Q4	0.421	0.411	0.416
	(6.688) **	(7.803) **	(7.627) **
EBD	0.071		
	(0.373)		
CONSTANT	-6.188	-3.530	-6.870
	(-1.241)	(-10.262) **	(-2.050) **
R-BAR SQUARED	0.965	0.967	0.966
S.E.E.	0.163	0.157	0.158
DURBIN-WATSON	2.043	2.033	2.026
D.F.	34	40	38

G313 - ELECTROCARDIOGRAM, PROFESS COMPONENT (GP/FP) FEE VARIABLE: RELATIVE FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3
GPPOP	-11.667	-12.033	1.951
	(-1.863) *	(-1.959) *	(0.279)
	-0.713	-0.736	0.119
NURSHP	-1.067		
	(-0.671)		
	-0.441		
BEDMSP	-2.741	-3.218	-1.969
	(-1.639)	(-2.373) **	(-1.051)
	-0.616	-0.724	-0.443
PCT60	235.480	207.750	
	(2.405) **	(2.676) **	
	2.406	2.122	
URATE	0.189	0.166	0.061
	(2.651) **	(2.651) **	(0.779)
	0.101	0.089	0.033
DPCI	1.124E-03	1.166E-03	
	(4.129) **	(4.300) **	
	1.031	1.069	
GRELFEE	-1.848	-5.657	1.937
	(-0.262)	(-1.034)	(0.269)
	-0.026	-0.079	0.027
T	-0.111	-0.102	0.097
	(-1.742) *	(-1.720) *	(2.709) **
	-0.211	-0.194	0.184
Q1	1.234	1.326	1.646
	(6.369) **	(10.128) **	(10.562) **
Q2	1.583	1.589	1.762
	(11.681) **	(11.783) **	(12.320) **
Q4	1.603	1.594	1.498
	(11.885) **	(12.045) **	(10.467) **
EBD	1.374	1.376	0.310
	(3.644) **	(3.895) **	(0.698)
CONSTANT	-8.716	-8.985	13.765
	(-1.093)	(-1.164)	(2.652) **
R-BAR SQUARED	0.963	0.964	0.959
S.E.E.	0.406	0.400	0.428
DURBIN-WATSON	1.695	1.791	1.769
D.F.	34	35	37

G313 - ELECTROCARDIOGRAM, PROFESS COMPONENT (GP/FP) FEE VARIABLE: REAL FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3	EQUATION 4
GPPOP	-10.802	-9.268	2.191	4.106
	(-1.657)	(-1.440)	(0.293)	(0.598)
	-0.660	-0.567	0.134	0.251
NURSHP	-1.058			
	(-0.646)			
	-0.437			
BEDMSP	-2.496	-2.888	-1.950	-1.598
	(-1.537)	(-1.899) *	(-0.960)	(-0.829)
	-0.561	-0.649	-0.439	-0.359
PCT60	228.340	182.920		
	(2.294) **	(2.188) **		
	2.333	1.869		
URATE	0.184	0.163	0.059	
	(2.433) **	(2.418) **	(0.720)	
	0.099	0.087	0.031	
DPCI	1.129E-03	1.163E-03		
	(3.830) **	(4.139) **		
	1.035	1.066		
DGFEE	-0.812	-0.216	0.030	-0.020
	(-0.273)	(-0.941)	(0.105)	(-0.079)
	-0.026	-0.069	9.521E-03	-6.500E-03
T	-0.103	-0.081	0.095	0.102
	(-1.583)	(-1.326)	(2.604) **	(3.009) **
	-0.196	-0.155	0.182	0.194
Q1	1.223	1.300	1.649	1.621
	(6.526) **	(8.078) **	(9.539) **	(9.419) **
Q2	1.592	1.613	1.760	1.762
	(11.799) **	(12.045) **	(12.148) **	(12.079) **
Q4	1.594	1.571	1.501	1.495
	(11.711) **	(11.889) **	(10.335) **	(10.230) **
EBD	1.298	1.236	0.326	
	(3.461) **	(3.520) **	(0.738)	
CONSTANT	-9.474	-9.423	13.795	11.611
	(-0.977)	(-0.967)	(2.054) **	(1.816) *
R-BAR SQUARED	0.963	0.963	0.959	0.960
S.E.E.	0.407	0.403	0.428	0.421
DURBIN-WATSON	1.702	1.801	1.771	1.798
D.F.	34	35	37	39

G313 - ELECTROCARDIOGRAM, PROFESS COMPONENT (SP)   FEE VARIABLE: RELATIVE FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3	EQUATION 4
SPPOP	-2.612		-7.361	-83.588
	(-0.036)		(-0.108)	(-0.910)
	-6.953E-03		-0.020	-0.223
NURSHP	-8.423	-6.585	-3.373	
	(-1.880) *	(-2.003) **	(-1.409)	
	-0.883	-0.690	-0.354	
BEDMSP	4.003			1.405
	(0.719)			(0.251)
	0.228			0.080
PCT60	372.130	351.910		
	(1.201)	(1.238)		
	0.965	0.912		
URATE	0.626	0.604	0.654	-0.103
	(2.750) **	(2.935) **	(2.923) **	(-0.431)
	0.085	0.082	0.089	-0.014
DPCI	3.986E-03	4.083E-03	4.002E-03	
	(4.419) **	(4.854) **	(4.344) **	
	0.927	0.949	0.931	
SRELFEE	-85.301	-79.116	-74.716	-48.975
	(-3.729) **	(-4.111) **	(-3.774) **	(-1.636)
	-0.430	-0.399	-0.377	-0.247
T	-0.352	-0.377	-0.111	0.347
	(-1.159)	(-1.587)	(-0.802)	(2.354) **
	-0.170	-0.182	-0.053	0.168
Q1	5.869	5.917	6.611	7.411
	(7.500) **	(9.906) **	(15.959) **	(14.082) **
Q2	6.657	6.631	6.896	7.256
	(14.744) **	(16.229) **	(18.924) **	(18.269) **
Q4	5.762	5.777	5.525	5.355
	(12.860) **	(14.150) **	(15.204) **	(13.407) **
EBD	5.614	5.515	5.034	3.420
	(4.293) **	(4.480) **	(4.406) **	(2.381) **
CONSTANT	10.189	12.519	37.452	62.325
	(0.368)	(0.544)	(2.499) **	(3.645) **
R-BAR SQUARED	0.967	0.969	0.968	0.962
S.E.E.	1.265	1.241	1.263	1.375
DURBIN-WATSON	1.725	1.699	1.776	1.844
D.F.	34	36	36	37

G313 - ELECTROCARDIOGRAM, PROFESS COMPONENT (SP)   FEE VARIABLE: REAL FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3	EQUATION 4
SPPOP	5.166		210.300	58.852
	(0.057)		(8.467) **	(1.503)
	0.014		0.560	0.157
NURSHP	-4.794			
	(-0.843)			
	-0.503			
BEDMSP	3.347			
	(0.397)			
	0.191			
PCT60	95.640			
	(0.229)			
	0.248			
URATE	0.310	0.513	0.061	0.374
	(1.018)	(2.839) **	(0.312)	(1.849) *
	0.042	0.070	8.240E-03	0.051
DPCI	3.106E-03	4.719E-03		3.700E-03
	(2.626) **	(10.165) **		(4.394) **
	0.722	1.098		0.861
DSFEE	-1.180	-2.169	-1.072	-1.710
	(-1.256)	(-5.556) **	(-1.966) *	(-3.396) **
	-0.135	-0.248	-0.123	-0.196
T	0.135			
	(0.342)			
	0.065			
Q1	5.960	5.922	6.136	5.975
	(5.753) **	(20.971) **	(12.365) **	(19.788) **
Q2	7.085	6.983	6.901	6.969
	(12.978) **	(18.064) **	(14.193) **	(17.915) **
Q4	5.281	5.289	5.688	5.374
	(10.031) **	(13.569) **	(11.699) **	(13.561) **
EBD	3.132	3.777	4.149	3.359
	(2.055) **	(3.302) **	(3.409) **	(2.831) **
CONSTANT	14.447	-0.725	25.179	1.890
	(0.350)	(-0.094)	(3.877) **	(0.230)
R-BAR SQUARED	0.960	0.961	0.954	0.962
S.E.E.	1.405	1.382	1.506	1.366
DURBIN-WATSON	1.834	1.844	1.797	1.833
D.F.	34	39	39	38

J135 - DIAGNOSTIC ULTRASOUND (ABDOMINAL) FEE VARIABLE: RELATIVE FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3
SPPOP	208.630	225.700	58.806
	(1.577)	(1.684)	(0.522)
	0.452	0.489	0.128
TECHP	30.002	26.812	30.195
	(2.109) **	(2.055) **	(2.230) **
	2.307	2.061	2.3215
BEDMSP	2.632	2.727	
	(2.132) **	(2.182) **	
	3.053	3.162	
PCT60	-74.712		
	(-0.889)		
	-3.937		
URATE	-0.102	-0.105	-0.107
	(-1.809) *	(-1.962) *	(-1.842) *
	-0.283	-0.291	-0.296
DPCI	2.274E-04	1.425E-03	
	(1.692)	(1.207)	
	1.075	0.674	
RELFEE	0.238	0.271	0.242
	(1.078)	(1.234)	(1.000)
	0.274	0.312	0.279
T	0.210	0.166	0.154
	(3.119) **	(2.947) **	(2.663) **
	2.057	1.627	1.510
Q1	0.498	0.407	0.408
	(3.217) **	(3.426) **	(4.00) **
Q2	0.289	0.247	0.241
	(3.069) **	(3.016) **	(3.480) **
Q4	0.204	0.253	0.268
	(2.175) **	(3.191) **	(3.988) **
EBD	-0.165		
	(-0.701)		
CONSTANT	-9.939	-18.190	-7.014
	(0.889)	(-3.678) **	(-2.298) **
R-BAR SQUARED	0.994	0.994	0.993
S.E.E.	0.216	0.213	0.222
DURBIN-WATSON	2.200	2.103	2.108
D.F.	34	36	38

J135 - DIAGNOSTIC ULTRASOUND (ABDOMINAL) FEE VARIABLE: REAL FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3
SPPOP	364.780	361.000	68.627
	(3.836) **	(3.003) **	(0.584)
	0.791	0.783	0.149
TECHP	20.126	24.306	30.075
	(1.874) *	(1.837) *	(1.979) *
	1.547	1.869	2.3123
BEDMSP	3.984	3.433	
	(4.528) **	(3.044) **	
	4.621	3.982	
PCT60	-205.330		
	(-3.154) **		
	-10.820		
URATE	-0.110	-0.080	-0.102
	(-2.179) **	(-1.415)	(-1.668)
	-0.303	-0.221	-0.283
DPCI	3.206E-04	1.859E-04	
	(3.447) **	(1.743) *	
	1.516	0.879	
DFEE	-0.072	-0.045	-1.027E-03
	(-4.291) **	(-2.202) **	(-0.037)
	-1.363	-0.859	-0.019
T	0.262	0.146	0.150
	(3.569) **	(1.745) *	(2.263) **
	2.576	1.435	1.471
Q1	0.479	0.288	0.404
	(3.300) **	(2.410) **	(3.673) **
Q2	0.326	0.223	0.238
	(3.458) **	(2.960) **	(3.865) **
Q4	0.164	0.272	0.268
	(1.780) *	(3.700) **	(4.422) **
EBD	-0.276	-0.277	-0.140
	(-1.615)	(-1.306)	(-0.570)
CONSTANT	7.822	-17.135	-6.004
	(0.883)	(-3.800) **	(-1.583)
R-BAR SQUARED	0.995	0.994	0.993
S.E.E.	0.195	0.212	0.226
DURBIN-WATSON	2.387	2.426	2.141
D.F.	34	35	37

J162 - DIAGNOSTIC ULTRASOUND (PELVIC) FEE VARIABLE: RELATIVE FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3	EQUATION 4
SPPOP	274.060	268.500	128.250	70.632
	(1.183)	(1.152)	(0.562)	(0.415)
	0.277	0.272	0.130	0.071
TECHP	50.621	46.104	29.706	31.244
	(2.042) **	(1.835) *	(1.249)	(1.397)
	1.815	1.653	1.065	1.1202
BEDMSP	3.368	3.155	0.985	
	(1.569)	(1.437)	(0.446)	
	1.822	1.706	0.533	
PCT60	-205.700	-185.950		
	(-1.446)	(-1.337)		
	-5.055	-4.569		
URATE	-0.063			
	(-0.605)			
	-0.081			
DPCI	0.610	5.652E-04	7.106E-05	
	(2.666) **	(2.449) **	(0.330)	
	1.344	1.246	0.157	
RELFEE	0.251	0.125	-0.614	-0.652
	(0.452)	(0.221)	(-1.083)	(-1.195)
	0.134	0.066	-0.327	-0.347
T	0.442	0.431	0.321	0.317
	(3.136) **	(2.897) **	(2.219) **	(2.232) **
	2.023	1.973	1.468	1.452
Q1	0.724	0.685	0.419	0.422
	(3.048) **	(2.982) **	(4.172) **	(4.471) **
Q2	0.482	0.047	0.373	0.373
	(3.792) **	(3.828) **	(4.096) **	(3.928) **
Q4	0.160	0.173	0.313	0.325
	(1.266)	(1.416)	(3.315) **	(3.320) **
EBD	-0.456	-0.442	-0.506	-0.555
	(-1.138)	(-1.107)	(-1.312)	(-1.553)
CONSTANT	-5.177	-5.397	-9.079	-4.812
	(-0.277)	(-0.294)	(-0.943)	(-0.873)
R-BAR SQUARED	0.996	0.996	0.996	0.996
S.E.E.	0.365	0.362	0.360	0.353
DURBIN-WATSON	2.162	2.162	1.885	1.859
D.F.	34	35	36	38

J162 - DIAGNOSTIC ULTRASOUND (PELVIC) FEE VARIABLE: REAL FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3
SPPOP	448.980	98.481	79.630
	(2.438) **	(0.401)	(0.450)
	0.454	0.100	0.081
TECHP	41.385	39.574	39.917
	(1.953) *	(1.556)	(1.728) *
	1.484	1.419	1.431
BEDMSP	5.937	0.521	
	(3.354) **	(0.206)	
	3.211	0.282	
PCT60	-299.570		
	(-2.432) **		
	-7.361		
URATE	-0.094	-0.016	
	(-1.001)	(-0.153)	
	-0.121	-0.021	
DPCI	7.150E-04	1.421E-04	
	(3.877) **	(0.630)	
	1.576	0.313	
DFEE	-0.082	0.026	0.034
	(-2.632) **	(0.594)	(0.897)
	-0.721	0.227	0.295
T	0.487	0.328	0.335
	(3.644) **	(2.346) **	(2.497) **
	2.231	1.500	1.534
Q1	0.680	0.485	0.508
	(2.929) **	(3.170) **	(3.726) **
Q2	0.538	0.373	0.384
	(4.019) **	(4.298) **	(4.250) **
Q4	0.133	0.304	0.313
	(1.012)	(3.424) **	(3.410) **
EBD	-0.549	-0.502	-0.588
	(-1.632)	(-1.256)	(-1.606)
CONSTANT	3.762	-13.861	-11.022
	(0.228)	(-1.415)	(-1.919) *
R-BAR SQUARED	0.997	0.996	0.996
S.E.E.	0.349	0.367	0.355
DURBIN-WATSON	2.140	1.908	1.845
D.F.	34	35	38

K007 - INDIVIDUAL PSYCHOTHERAPY, GP/FP FEE VARIABLE: RELATIVE FEE
DEPENDENT VARIABLE: UTILP

VARIABLES	EQUATION 1	EQUATION 2	EQUATION 3	EQUATION 4
SPPOP	-0.588		-15.971	-15.327
	(-0.045)		(-0.925)	(-0.822)
	-0.014		-0.385	-0.369
NURSHP				
BEDPSP	-28.021			
	(-0.689)			
	-0.210			
PCT60	-748.350	-623.660		
	(-3.260) **	(-4.263) **		
	-3.014	-2.512		
URATE	0.015			
	(0.096)			
	3.269E-03			
DPCI	4.367E-04			6.580E-05
	(0.537)			(0.095)
	0.158			0.024
RELFEE	12.212	9.205	3.550E-03	0.064
	(3.211) **	(3.358) **	(9.929E-04)	(0.017)
	0.690	0.520	2.005E-04	3.588E-03
T	0.683	0.604	0.326	0.320
	(4.586) **	(6.122) **	(5.528) **	(3.991) **
	0.512	0.453	0.245	0.240
Q1	4.263	4.243	3.502	3.490
	(8.787) **	(9.783) **	(11.593) **	(10.538) **
Q2	3.511	3.454	3.260	3.253
	(9.291) **	(10.563) **	(13.806) **	(13.114) **
Q4	3.031	3.139	3.400	3.401
	(8.072) **	(9.737) **	(14.864) **	(14.674) **
EBD	2.412	2.891	1.313	1.308
	(2.699) **	(5.478) **	(1.452)	(1.401)
CONSTANT	98.505	86.553	37.496	36.143
	(3.713) **	(5.298) **	(2.299) **	(1.652)
R-BAR SQUARED	0.958	0.961	0.960	0.960
S.E.E.	0.887	0.856	0.861	0.871
DURBIN-WATSON	1.930	1.906	1.982	1.982
D.F.	35	39	39	38

K007 - INDIVIDUAL PSYCHOTHERAPY, GP/FP FEE VARIABLE: REAL FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3	EQUATION 4
SPPOP	-16.429		-15.281	-14.664
	(-0.880)		(-0.929)	(-0.843)
	-0.396		-0.368	-0.353
NURSHP				
BEDPSP	-0.722			
	(-0.016)			
	-5.399E-03			
PCT60	-0.398			
	(-1.269E-03)			
	-1.605E-03			
URATE	-0.099			
	(-0.392)			
	-0.021			
DPCI	3.658E-05			7.397E-05
	(0.051)			(0.110)
	0.013			0.027
DFEE	-0.083	-0.085	-0.074	-0.075
	(-0.557)	(-0.641)	(-0.566)	(-0.563)
	-0.058	-0.059	-0.052	-0.052
T	0.335	0.291	0.334	0.329
	(1.573)	(7.990) **	(6.078) **	(4.502) **
	0.251	0.218	0.251	0.247
Q1	3.402	3.283	3.416	3.402
	(6.360) **	(10.241) **	(10.202) **	(9.575) **
Q2	3.268	3.216	3.272	3.266
	(10.277) **	(13.931) **	(14.300) **	(13.735) **
Q4	3.386	3.435	3.393	3.393
	(11.139) **	(14.994) **	(15.087) **	(14.899) **
EBD	1.376	1.318	1.323	1.318
	(1.396)	(1.494)	(1.473)	(1.416)
CONSTANT	40.254	26.964	38.562	37.267
	(0.972)	(9.235) **	(2.926) **	(2.085) **
R-BAR SQUARED	0.957	0.961	0.961	0.960
S.E.E.	0.899	0.856	0.858	0.868
DURBIN-WATSON	1.968	1.971	1.978	1.978
D.F.	35	40	39	38

K009 - ANNUAL HEALTH EXAM, AGE>14 FEE VARIABLE: RELATIVE FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3
SPPOP	-45.457	-47.737	-27.371
	(-4.358) **	(-4.672) **	(-3.260) **
	-2.373	-2.492	-1.429
NURSHP			
BEDMSP	3.403	3.405	1.132
	(1.418)	(1.486)	(0.428)
	0.618	0.618	0.206
PCT60	-522.000	-454.910	
	(-2.650) **	(-2.716) **	
	-4.627	-4.033	
URATE	0.229	0.221	0.050
	(2.664) **	(2.588) **	(0.722)
	0.107	0.103	0.024
DPCI	-7.612E-04	-8.582E-04	-1.031E-03
	(-1.999) *	(-2.624) **	(-2.729) **
	-0.600	-0.676	-0.813
RELFEE	-1.144	-1.490	-1.747
	(-1.059)	(-1.473)	(-1.399)
	-0.127	-0.165	-0.194
T	0.952	0.916	0.482
	(5.368) **	(5.415) **	(7.617) **
	1.970	1.896	0.997
Q1	0.490	0.428	-0.449
	(1.155)	(1.032)	(-1.745) *
Q2	0.599	0.558	0.097
	(2.259) **	(2.180) **	(0.508)
Q4	-1.691	-1.648	-1.194
	(-6.589) **	(-6.835) **	(-6.538) **
EBD	-0.235		
	(-0.614)		
CONSTANT	100.750	96.001	37.213
	(4.012) **	(3.927) **	(3.209) **
R-BAR SQUARED	0.983	0.984	0.980
S.E.E.	0.374	0.369	0.404
DURBIN-WATSON	1.835	1.776	1.844
D.F.	19	20	21

K009 - ANNUAL HEALTH EXAM, AGE>14 FEE VARIABLE: REAL FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3	EQUATION 4
SPPOP	-48.211	-48.211	-24.760	-20.693
	(-4.660) **	(-4.660) **	(-2.409) **	(-2.921) **
	-2.517	-2.517	-1.293	-1.080
NURSHP				
BEDMSP	5.035	5.035	2.448	
	(2.067) *	(2.067) *	(0.849)	
	0.914	0.914	0.445	
PCT60	-637.040	-637.040		
	(-3.350) **	(-3.350) **		
	-5.647	-5.647		
URATE	0.266	0.266	2.478E-02	
	(2.929) **	(2.929) **	(0.343)	
	0.124	0.124	0.012	
DPCI	-6.521E-04	-6.521E-04	-9.129E-04	-9.232E-04
	(-1.889) *	(-1.889) *	(-2.234) **	(-3.208) **
	-0.514	-0.514	-0.720	-0.728
DFEE	-0.093	-0.093	-0.040	-0.023
	(-1.300)	(-1.300)	(-0.468)	(-0.316)
	-0.133	-0.133	-0.057	-0.033
T	1.076	1.076	0.462	0.429
	(5.591) **	(5.591) **	(5.927) **	(7.490) **
	2.227	2.227	0.957	0.888
Q1	0.586	0.586	-0.509	-0.527
	(1.406)	(1.406)	(-1.753) *	(-2.137) **
Q2	0.715	0.715	0.059	0.041
	(2.629) **	(2.629) **	(0.296)	(0.216)
Q4	-1.828	-1.828	-1.204	-1.143
	(-7.050) **	(-7.050) **	(-6.281) **	(-6.321) **
EBD	-0.404	-0.404	0.128	
	(-1.225)	(-1.225)	(0.292)	
CONSTANT	109.320	109.320	27.981	32.962
	(4.281) **	(4.281) **	(2.651) **	(4.978) **
R-BAR SQUARED	0.983	0.983	0.978	0.980
S.E.E.	0.371	0.371	0.424	0.406
DURBIN-WATSON	1.798	1.798	1.831	1.865
D.F.	19	19	20	23

K013 - COUNSELLING, GP/FP FEE VARIABLE: RELATIVE FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3
SPPOP	4.465		2.469
	(0.376)		(0.239)
	0.447		0.247
NURSHP			
BEDMSP	-5.614	-4.652	-4.771
	(-1.649)	(-1.447)	(-1.459)
	-2.007	-1.663	-1.706
PCT60	147.070		
	(0.708)		
	2.483		
URATE	0.030		
	(0.181)		
	0.026		
DPCI	-8.126E-05		
	(-0.192)		
	-0.123		
RELFEE	1.164	1.234	1.377
	(0.365)	(0.442)	(0.465)
	0.264	0.280	0.313
T	0.183	0.312	0.302
	(1.124)	(6.332) **	(4.912) **
	0.659	1.125	1.089
Q1	0.596	0.829	0.811
	(1.797) *	(6.245) **	(5.267) **
Q2	0.465	0.594	0.580
	(2.242) **	(4.797) **	(4.234) **
Q4	0.567	0.441	0.452
	(2.780) **	(3.574) **	(3.386) **
EBD	-0.722	-0.818	-0.786
	(-1.270)	(-1.535)	(-1.454)
CONSTANT	-6.779	10.474	8.722
	(-0.245)	(0.875)	(0.582)
R-BAR SQUARED	0.985	0.987	0.987
S.E.E.	0.528	0.501	0.508
DURBIN-WATSON	1.920	1.933	1.931
D.F.	26	30	29

K013 - COUNSELLING, GP/FP FEE VARIABLE: REAL FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3
SPPOP	1.570		0.631
	(0.140)		(0.064)
	0.157		0.063
NURSHP			
BEDMSP	-5.771	-4.892	-4.920
	(-1.603)	(-1.470)	(-1.455)
	-2.063	-1.749	-1.759
PCT60	151.740		
	(0.712)		
	2.562		
URATE	0.026		
	(0.155)		
	0.023		
DPCI	-1.695E-04		
	(-0.420)		
	-0.256		
DFEE	0.056	0.054	0.054
	(0.600)	(0.630)	(0.612)
	0.161	0.155	0.153
T	0.186	0.304	0.302
	(1.067)	(5.483) **	(4.696) **
	0.671	1.097	1.089
Q1	0.672	0.879	0.874
	(1.971) *	(5.422) **	(4.862) **
Q2	0.480	0.594	0.591
	(2.285) **	(4.895) **	(4.533) **
Q4	0.570	0.448	0.450
	(2.713) **	(3.620) **	(3.439) **
EBD	-0.774	-0.811	-0.801
	(-1.357)	(-1.506)	(-1.465)
CONSTANT	-2.530	12.492	12.117
	(-0.092)	(1.109)	(0.897)
R-BAR SQUARED	0.986	0.987	0.987
S.E.E.	0.527	0.500	0.507
DURBIN-WATSON	1.928	1.936	1.935
D.F.	26	30	29

K195 - FAMILY THERAPY FEE VARIABLE: RELATIVE FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3
SPPOP	1.758		18.693
	(0.048)		(1.400)
	0.043		0.455
NURSHP			
BEDPSP	-4.779		
	(-0.680)		
	-0.276		
PCT60	-24.427		
	(-0.434)		
	-0.760		
URATE	0.055	0.058	0.051
	(1.252)	(1.347)	(1.201)
	0.090	0.095	0.084
DPCI	1.758E-04	2.375E-04	1.982E-04
	(1.313)	(2.470) **	(2.113) **
	0.491	0.663	0.553
RELFEE	0.254	0.341	0.245
	(0.492)	(0.714)	(0.509)
	0.082	0.110	0.079
T	0.396		
	(0.638)		
	0.230		
Q1	0.690	0.665	0.630
	(5.395) **	(16.909) **	(13.010) **
Q2	0.843	0.822	0.803
	(11.710) **	(22.186) **	(20.171) **
Q4	0.601	0.615	0.635
	(9.206) **	(16.569) **	(15.906) **
EBD	0.566		
	(0.348)		
CONSTANT	4.821	0.040	-0.993
	(0.594)	(0.031)	(-0.599)
R-BAR SQUARED	0.949	0.951	0.953
S.E.E.	0.152	0.150	0.147
DURBIN-WATSON	1.999	2.012	2.003
D.F.	35	40	39

K195 - FAMILY THERAPY FEE VARIABLE: REAL FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3
SPPOP	12.354		12.867
	(0.290)		(1.728) *
	0.301		0.313
NURSHP			
BEDPSP	-9.447	0.613	
	(-1.396)	(0.112)	
	-0.546	0.035	
PCT60	22.038		
	(0.454)		
	0.686		
URATE	0.038		
	(0.990)		
	0.061		
DPCI	1.719E-04	2.877E-04	1.995E-04
	(1.318)	(3.286) **	(2.090) **
	0.499	0.803	0.557
DFEE	0.029	0.042	0.025
	(1.551)	(2.586) **	(1.468)
	0.197	0.288	0.170
T	-7.208E-03		
	(-0.116)		
	-0.042		
Q1	0.636	0.729	0.683
	(4.174) **	(13.543) **	(12.853) **
Q2	0.792	0.803	0.799
	(10.391) **	(19.259) **	(20.833) **
Q4	0.645	0.626	0.635
	(9.457) **	(14.831) **	(16.192) **
EBD	0.211	0.258	0.154
	(1.245)	(1.684)	(0.981)
CONSTANT	-1.230	-1.130	-0.664
	(-0.156)	(-0.961)	(-0.745)
R-BAR SQUARED	0.951	0.949	0.952
S.E.E.	0.150	0.152	0.147
DURBIN-WATSON	1.976	1.960	1.983
D.F.	35	39	40

K197 - INDIVIDUAL PSYCHOTHERAPY, PSYCHIATRY   FEE VARIABLE: RELATIVE FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3
SPPOP	667.070	630.550	363.420
	(4.447) **	(4.807) **	(2.526) **
	1.495	1.393	0.803
NURSHP			
BEDPSP	66.712	57.713	22.687
	(2.174) **	(2.074) **	(0.712)
	0.350	0.303	0.119
PCT60	427.640	447.780	
	(3.787) **	(4.637) **	
	1.208	1.265	
URATE	0.061		
	(0.421)		
	9.096E-03		
DPCI	7.574E-04		
	(0.911)		
	0.192		
RELFEE	-2.955	-3.773	-6.520
	(-0.635)	(-1.091)	(-1.603)
	-0.079	-0.100	-0.173
T	-0.478	-0.393	0.255
	(-2.186) **	(-2.318) **	(1.509)
	-0.251	-0.207	0.134
Q1	4.768	4.873	5.895
	(8.686) **	(9.350) **	(12.154) **
Q2	5.873	5.949	6.673
	(12.808) **	(13.107) **	(14.617) **
Q4	7.618	7.589	6.968
	(17.350) **	(17.325) **	(15.465) **
EBD	3.737	3.768	2.265
	(7.114) **	(7.351) **	(3.136) **
CONSTANT	-101.990	-88.367	0.895
	(-3.479) **	(-4.819) **	(0.056)
R-BAR SQUARED	0.993	0.993	0.993
S.E.E.	0.905	0.894	0.904
DURBIN-WATSON	1.862	1.876	1.890
D.F.	35	37	38

K197 - INDIVIDUAL PSYCHOTHERAPY, PSYCHIATRY FEE VARIABLE: REAL FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1		EQUATION 2		EQUATION 3	
SPPOP	654.900		662.400		428.930	
	(3.817)	**	(4.187)	**	(2.495)	**
	1.447		1.463		0.947	
NURSHP						
BEDPSP	72.045		73.654		24.653	
	(2.342)	**	(2.492)	**	(0.781)	
	0.378		0.386		0.129	
PCT60	351.810		361.240			
	(1.866)	*	(2.160)	**		
	0.994		1.020			
URATE	0.016					
	(0.130)					
	2.425E-03					
DPCI	1.088E-03		1.055E-03		9.793E-04	
	(1.314)		(1.414)		(1.287)	
	0.276		0.267		0.248	
DFEE	0.128		0.127		0.170	
	(0.637)		(0.650)		(1.080)	
	0.071		0.071		0.095	
T	-0.445		-0.458		0.102	
	(-1.777)	*	(-2.022)	*	(0.480)	
	-0.234		-0.241		0.053	
Q1	5.097		5.073		5.956	
	(6.180)	**	(6.490)	**	(9.513)	**
Q2	5.918		5.903		6.512	
	(12.496)	**	(12.954)	**	(14.367)	**
Q4	7.579		7.594		7.081	
	(16.608)	**	(17.361)	**	(16.411)	**
EBD	3.747		3.747		2.483	
	(7.030)	**	(7.143)	**	(3.517)	**
CONSTANT	-102.540		-104.210		-29.020	
	(-3.372)	**	(3.745)	**	(-1.240)	
R-BAR SQUARED	0.993		0.993		0.993	
S.E.E.	0.904		0.893		0.912	
DURBIN-WATSON	1.848		1.848		1.932	
D.F.	35		36		37	

R742 - CORONARY ARTERY REPAIR FEE VARIABLE: RELATIVE FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2@	EQUATION 3	EQUATION 4
SPPOP	0.029		-4.438	-4.446
	(0.013)		(-2.306) **	(-2.342) **
	5.901E-03		-0.917	-0.918
NURSHP	0.040	0.053	2.505E-04	
	(2.673) **	(4.075) **	(0.024)	
	8.799	11.498	0.055	
BEDMSP	-0.026	-0.027	0.019	0.019
	(-1.863) *	(-1.841) *	(1.324)	(1.772) *
	-3.118	-3.255	2.215	2.236
PCT60	0.125	-1.133		
	(0.142)	(-4.632) **		
	0.674	-6.131		
URATE	-1.104E-03	-1.014E-03	-4.465E-04	-4.406E-04
	(-2.213) **	(-2.325) **	(-0.808)	(-0.903)
	-0.313	-0.288	-0.127	-0.125
DPCI	-1.588E-06			
	(-0.537)			
	-0.771			
RELFEE	-1.378E-04	-2.054E-04	-8.549E-04	-8.617E-04
	(-0.388)	(-0.815)	(-2.502) **	(-3.819) **
	-0.170	-0.254	-1.057	-1.066
T	-7.462E-04			
	(-1.389)			
	-0.753			
Q1	3.400E-03	5.234E-03	2.284E-03	2.273E-03
	(1.808) *	(3.757) **	(2.119) **	(2.470) **
Q2	9.985E-04	0.016	1.041E-03	1.035E-03
	(0.851)	(1.370)	(1.142)	(1.180)
Q4	1.454E-03			
	(1.215)			
EBD	-1.186E-03	-4.969E-03	4.923E-03	4.996E-03
	(-0.243)	(-1.885) *	(1.207)	(1.520)
CONSTANT	-0.089	-0.016	0.020	0.021
	(-1.093)	(-0.395)	(0.344)	(0.485)
R-BAR SQUARED	0.644	0.626	0.576	0.586
S.E.E.	3.244E-03	3.322E-03	3.540E-03	3.499E-03
DURBIN-WATSON	2.276	2.012	2.159	2.160
D.F.	34	41	38	39

R742 - CORONARY ARTERY REPAIR FEE VARIABLE: REAL FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2@	EQUATION 3	EQUATION 4
SPPOP	2.621	2.266	1.295	-0.503
	(1.965) *	(1.494)	(0.989)	(0.200)
	0.541	0.468	0.267	-0.104
NURSHP	0.063	0.067	0.048	
	(5.138) **	(6.582) **	(8.676) **	
	13.766	14.691	10.534	
BEDMSP	-0.048	-0.048	-0.040	0.021
	(-3.832) **	(-3.082) **	(-3.134) **	(1.158)
	-5.700	-5.769	-4.734	2.483
PCT60	-1.053	-1.442		
	(-1.355)	(-5.455) **		
	-5.699	-7.805		
URATE	-1.262E-03	-1.037E-03	-1.017E-03	2.919E-04
	(-3.894) **	(-2.662) **	(-3.396) **	(0.437)
	-0.358	-0.294	-0.289	0.083
DPCI	-2.109E-06			
	(-0.820)			
	-1.024			
DFEE	3.440E-05	2.882E-05	1.419E-05	7.135E-06
	(2.277) **	(1.635)	(0.982)	(0.250)
	0.778	0.652	0.321	0.161
T	-1.365E-04		-8.768E-04	5.761E-05
	(-0.326)		(-7.137) **	(0.240)
	-0.138		-0.884	0.058
Q1	6.019E-03	6.361E-03	2.825E-03	1.732E-03
	(2.923) **	(4.715) **	(2.481) **	(1.261)
Q2	1.806E-03	1.706E-03	4.044E-04	2.001E-03
	(1.261)	(1.523)	(0.367)	(1.797) *
Q4	7.570E-04			
	(0.523)			
EBD	-0.010	-0.011	-4.875E-03	3.097E-04
	(-2.523) **	(-3.540) **	(-2.053) **	(0.085)
CONSTANT	-0.031	-0.025	-0.111	-0.045
	(-0.645)	(-0.702)	(-3.810) **	(-0.817)
R-BAR SQUARED	0.668	0.645	0.660	0.497
S.E.E.	3.131E-03	3.239E-03	3.17E-03	3.854E-03
DURBIN-WATSON	2.104	2.125	2.202	2.002
D.F.	34	40	37	38

R792 - CAROTID ENDARTERECTOMY FEE VARIABLE: RELATIVE FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3
SPPOP	-3.760	-0.895	-2.863
	(-1.372)	(-0.882)	(-1.309)
	-3.914	-0.931	-2.980
NURSHP	-9.297E-04		
	(-0.028)		
	-0.065		
BEDMSP	-0.092	-0.033	-0.045
	(-2.335) **	(-1.774) *	(-1.331)
	-3.509	-1.256	-1.712
PCT60	-0.218		
	(0.101)		
	-0.376		
URATE	1.984E-04	2.264E-03	1.790E-03
	(1.352)	(1.916) *	(1.514)
	0.180	0.205	0.162
DPCI	-5.994E-06		
	(-0.916)		
	-0.929		
RELFEE	-2.123E-03	-1.121E-03	-2.010E-03
	(-2.136) **	(-1.383)	(-2.623) **
	-0.637	-0.336	-0.603
T	-9.790E-04		3.508E-04
	(-0.518)		(0.279)
	-0.315		0.113
T2			-2.088E-05
			(-1.523)
			-0.235
Q1	-1.653E-03	4.949E-05	-1.492E-03
	(-0.340)	(0.027)	(-0.611)
Q2	6.013E-03	6.087E-03	4.570E-03
	(1.748) *	(3.404) **	(1.927) *
Q4	2.900E-03		
	(0.849)		
EBD	-0.022	-0.022	-0.019
	(-2.503) **	(-3.443) **	(-2.592) **
CONSTANT	0.871	0.274	0.517
	(2.613) **	(4.062) **	(1.881) *
R-BAR SQUARED	0.819	0.832	0.836
S.E.E.	7.343E-03	7.086E-03	6.992E-03
DURBIN-WATSON	2.067	1.968	1.962
D.F.	34	39	37

R792 - CAROTID ENDARTERECTOMY FEE VARIABLE: REAL FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3
SPPOP	-3.268	-2.220	-3.622
	(-1.246)	(-1.844) *	(-1.659)
	-3.402	-2.311	-3.770
NURSHP	0.017		
	(0.529)		
	1.160		
BEDMSP	-0.074	-0.023	-0.026
	(-1.846) *	(-1.168)	(-0.779)
	-2.822	-0.889	-0.990
PCT60	0.702		
	(0.346)		
	1.212		
URATE	1.063E-03		
	(0.763)		
	0.096		
DPCI	-6.769E-06		
	(-0.967)		
	-1.049		
DFEE	-1.647E-04	-7.194E-05	-2.438E-05
	(-2.370) **	(-0.985)	(-0.298)
	-0.827	-0.361	-0.122
T	-7.934E-04		4.174E-04
	(-0.422)		(0.320)
	-0.255		0.134
T2			-1.974E-05
			(-1.172)
			-0.222
Q1	-0.431	-1.709E-03	-1.248E-03
	(-0.826)	(-0.660)	(-0.427)
Q2	6.309E-03	6.271E-03	5.239E-03
	(1.845) *	(3.632) **	(2.338) **
Q4	2.243E-03		
	(0.657)		
EBD	-0.026	-0.022	-0.018
	(-2.823) **	(-3.343) **	(-2.249) **
CONSTANT	0.570	0.376	0.494
	(2.216) **	(3.773) **	(1.823) *
R-BAR SQUARED	0.817	0.823	0.824
S.E.E.	7.387E-03	7.270E-03	7.243E-03
DURBIN-WATSON	2.045	1.977	1.989
D.F.	34	40	38

R837 - LIGATION & AVULSION, VEINS (SP) FEE VARIABLE: RELATIVE FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3	EQUATION 4
SPPOP	4.358	5.647	0.231	-4.111
	(1.549)	(2.953) **	(0.123)	(-1.043)
	3.103	4.021	0.165	-2.927
NURSHP	-0.266	-0.276	-0.183	
	(-4.300) **	(-6.508) **	(-4.546) **	
	-13.020	-13.525	-8.951	
BEDMSP	0.147	0.172	0.075	-0.072
	(2.466) **	(3.599) **	(1.345)	(-1.278)
	3.800	4.445	1.941	-1.869
PCT60	7.134	5.319		
	(2.386) **	(3.747) **		
	8.905	6.639		
URATE	6.853E-03	7.643E-03	6.877E-03	3.138E-03
	(2.996) **	(4.495) **	(3.709) **	(2.071) **
	0.452	0.504	0.454	0.207
DPCI	-2.927E-05	-3.071E-05	-1.445E-05	
	(-3.422) **	(-3.699) **	(-2.023) *	
	-3.254	-3.413	-1.606	
SRELFEE	-2.670E-03	-2.983E-03	-5.764E-03	-6.932E-03
	(-0.897)	(-1.119)	(-1.610)	(-1.573)
	-0.118	-0.132	-0.254	-0.306
T	-2.117E-03			-4.850E-03
	(-0.837)			(-3.502) **
	-0.602			-1.380
Q1	-6.606E-03			0.012
	(-0.715)			(2.892) **
Q2	0.011	0.014	6.031E-03	8.551E-03
	(1.894) *	(3.455) **	(1.482)	(2.683) **
Q4	-1.299E-03			-1.378E-03
	(-0.244)			(-0.433)
EBD	0.055	0.052	0.036	0.023
	(5.825) **	(7.627) **	(4.255) **	(2.483) **
CONSTANT	0.193	0.277	1.081	0.848
	(0.583)	(0.976)	(3.562) **	(1.887) *
R-BAR SQUARED	0.899	0.906	0.885	0.888
S.E.E.	8.712E-03	8.414E-03	9.270E-03	9.153E-03
DURBIN-WATSON	2.097	2.120	2.036	1.968
D.F.	20	23	24	23

R837 - LIGATION & AVULSION, VEINS (SP)   FEE VARIABLE: REAL FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1		EQUATION 2		EQUATION 3		EQUATION 4	
SPPOP	4.355		5.179		-1.102		-4.305	
	(1.484)		(2.280)	**	(-0.543)		(-1.107)	
	3.101		3.688		-0.784		-3.065	
NURSHP	-0.270		-0.269		-0.180			
	(-4.339)	**	(-6.235)	**	(-4.959)	**		
	-13.239		-13.188		-8.816			
BEDMSP	0.147		0.167		0.094		-0.051	
	(2.261)	**	(3.284)	**	(1.638)		(-0.833)	
	3.801		4.318		2.432		-1.308	
PCT60	7.389		5.294					
	(2.425)	**	(3.594)	**				
	9.222		6.608					
URATE	6.735E-03		7.329E-03		6.503E-03		2.781E-03	
	(2.926)	**	(4.354)	**	(3.643)	**	(1.735)	*
	0.446		0.483		0.429		0.183	
DPCI	-3.026E-05		-3.086E-05		-1.423E-05			
	(-3.531)	**	(-3.709)	**	(-2.041)	*		
	-3.364		-3.430		-1.582			
DSFEE	-1.600E-04		-2.138E-04		-5.942E-04		-6.014E-04	
	(-0.603)		(-0.868)		(-1.922)	*	(-1.698)	
	-0.121		-0.162		-0.450		-0.456	
T	-2.023E-03						-4.321E-03	
	(-0.777)						(-3.501)	**
	-0.576						-1.229	
Q1	-7.947E-03						0.010	
	(-0.871)						(2.230)	**
Q2	0.011		0.014		7.944E-03		9.028E-03	
	(1.840)	*	(3.435)	**	(1.981)	*	(2.892)	**
Q4	-1.480E-03						-2.267E-03	
	(-0.273)						(-0.740)	
EBD	0.055		0.050		0.036		0.020	
	(5.790)	**	(7.306)	**	(4.486)	**	(2.283)	**
CONSTANT	0.193		0.303		1.142		0.801	
	(0.555)		(0.998)		(3.786)	**	(1.830)	*
R-BAR SQUARED	0.897		0.904		0.889		0.890	
S.E.E.	8.792E-03		8.491E-03		9.129E-03		9.094E-03	
DURBIN-WATSON	2.093		2.086		2.039		1.913	
D.F.	20		23		24		23	

S063 - TONSILLECTOMY (GP/FP)   FEE VARIABLE: RELATIVE FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2@	EQUATION 3@
GPPOP	0.834	0.832	0.943
	(4.113) **	(4.629) **	(5.302) **
	4.231	4.221	4.785
NURSHP	0.086	0.081	
	(1.324)	(1.946) *	
	2.939	2.7919	
BEDMSP	0.104	0.122	0.206
	(1.449)	(1.817) *	(3.821) **
	1.947	2.270	3.842
PCT60	-0.524		
	(-0.113)		
	-0.445		
URATE	-3.233E-03	-3.627E-03	-1.635E-03
	(-1.181)	(-1.722) *	(-0.840)
	-0.144	-0.161	-0.073
DPCI	4.740E-06		
	(0.398)		
	0.361		
GRELFEE	-5.013E-03	-2.669E-03	-4.920E-03
	(-0.368)	(-0.244)	(-0.430)
	-0.107	-0.057	-0.105
T	-7.941E-03	-7.932E-03	-6.938E-03
	(-2.561) **	(-6.992) **	(-6.487) **
	-1.255	-1.253	-1.096
Q1	0.029	0.029	0.024
	(2.491) **	(4.779) **	(4.242) **
Q2	0.013	0.013	0.014
	(2.185) **	(2.581) **	(2.750) **
Q4	0.014	0.015	0.014
	(2.354) **	(2.978) **	(2.788) **
EBD	-2.947E-03		
	(-0.186)		
CONSTANT	-1.108	-1.157	-1.079
	(-2.500) **	(-8.731) **	(-8.067) **
R-BAR SQUARED	0.983	0.983	0.982
S.E.E.	0.014	0.014	0.014
DURBIN-WATSON	2.001	2.010	1.962
D.F.	34	40	41

S063 - TONSILLECTOMY (GP/FP) FEE VARIABLE: REAL FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3
GPPOP	0.744	0.790	0.913
	(3.620) **	(4.264) **	(4.944) **
	3.777	4.013	4.632
NURSHP	0.113	0.084	
	(1.769) *	(2.039) **	
	3.864	2.887	
BEDMSP	0.087	0.108	0.198
	(1.181)	(1.568)	(3.518) **
	1.621	2.012	3.689
PCT60	-3.045		
	(-0.681)		
	-2.582		
URATE	-3.264E-03	-4.101E-03	-2.091E-03
	(-1.147)	(-2.090) **	(-1.154)
	-0.145	-0.182	-0.093
DPCI	3.751E-06		
	(0.316)		
	0.285		
DGFEE	3.077E-04	2.193E-04	1.145E-04
	(0.603)	(0.512)	(0.254)
	0.137	0.097	0.051
T	-6.509E-03	-8.161E-03	-7.117E-03
	(-2.176) **	(-7.238) **	(-6.646) **
	-1.028	-1.289	-1.125
Q1	0.036	0.030	0.025
	(3.085) **	(4.769) **	(4.170) **
Q2	0.015	0.013	0.014
	(2.490) **	(2.525) **	(2.703) **
Q4	0.013	0.015	0.014
	(2.223) **	(2.981) **	(2.777) **
EBD	-2.489E-03		
	(-0.163)		
CONSTANT	-0.842	-1.111	-1.046
	(-1.822) *	(-7.330) **	(-6.634) **
R-BAR SQUARED	0.983	0.983	0.982
S.E.E.	0.014	0.013	0.014
DURBIN-WATSON	1.996	2.011	1.966
D.F.	34	40	41

SC63 - TONSILLECTOMY (SP) FEE VARIABLE: RELATIVE FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3	EQUATION 4
SPPOP	-23.438		9.101	
	(-0.939)		(0.374)	
	-0.691		0.268	
NURSHP	-0.076			
	(-0.440)			
	-0.587			
BEDMSP	0.236	0.294	0.194	0.148
	(1.348)	(2.640) **	(0.956)	(1.054)
	1.000	1.244	0.820	0.625
PCT60	-16.030	-17.387		
	(-1.607)	(-3.436) **		
	-3.081	-3.342		
URATE	-5.056E-04			
	(-0.847)			
	-5.095E-03			
DPCI	-8.056E-05	-5.649E-05	-7.164E-06	
	(-1.766) *	(-2.199) **	(-0.199)	
	-1.389	-0.974	-0.124	
SRELFEE	0.145	0.174	0.152	0.136
	(3.400) **	(6.341) **	(3.112) **	(3.345) **
	0.783	0.938	0.819	0.737
T	0.011	0.011	-5.194E-03	-5.902E-03
	(1.878) *	(2.156) **	(-2.011) **	(-3.449) **
	0.396	0.391	-0.186	-0.211
Q1	0.152	0.157	0.125	0.124
	(6.064) **	(8.780) **	(9.159) **	(9.844) **
Q2	0.096	0.096	0.079	0.078
	(6.299) **	(6.603) **	(5.884) **	(6.037) **
Q4	0.029	0.027	0.039	0.039
	(1.867) *	(1.872) *	(2.877) **	(3.044) **
EBD	0.122	0.104	0.107	0.102
	(3.035) **	(4.396) **	(3.430) **	(3.774) **
CONSTANT	3.299	1.946	-0.518	-0.186
	(2.121) **	(3.437) **	(-0.380)	(-0.440)
R-BAR SQUARED	0.896	0.901	0.885	0.890
S.E.E.	0.039	0.038	0.041	0.040
DURBIN-WATSON	2.076	2.078	2.045	2.041
D.F.	34	37	37	39

S063 - TONSILLECTOMY (SP)   FEE VARIABLE: REAL FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3	EQUATION 4
SPPOP	-17.324		17.572	
	(-0.860)		(0.696)	
	-0.511		0.518	
NURSHP	-0.022			
	(-0.142)			
	-0.169			
BEDMSP	-4.156E-03		0.088	0.049
	(-0.030)		(0.417)	(0.268)
	-0.018		0.374	0.208
PCT60	-23.421	-23.212		
	(-2.716) **	(-6.615) **		
	-4.502	-4.462		
URATE	-1.579E-03			
	(-0.346)			
	-0.016			
DPCI	-1.151E-04	-9.850E-05	-2.460E-05	
	(-3.097) **	(-4.668) **	(-0.673)	
	-1.985	-1.699	-0.424	
DSFEE	6.567E-03	7.548E-03	0.057	4.552E-03
	(5.029) **	(11.608) **	(2.972) **	(2.855) **
	0.740	0.851	0.646	0.513
T	0.015	0.014	-5.548E-03	-6.852E-03
	(3.156) **	(4.469) **	(-2.095) **	(-3.041) **
	0.537	0.490	-0.199	-0.245
Q1	0.187	0.191	0.142	0.135
	(7.291) **	(10.081) **	(8.396) **	(9.146) **
Q2	0.100	0.100	0.078	0.077
	(6.839) **	(7.137) **	(5.790) **	(5.841) **
Q4	0.029	0.029	0.042	0.042
	(1.934) *	(2.104) **	(3.114) **	(3.201) **
EBD	0.102	0.095	0.083	0.073
	(2.717) **	(5.911) **	(2.473) **	(2.363) **
CONSTANT	5.030	4.214	-0.014	0.315
	(5.112) **	(8.040) **	(-1.049)	(0.564)
R-BAR SQUARED	0.909	0.915	0.887	0.890
S.E.E.	0.037	0.035	0.041	0.040
DURBIN-WATSON	2.124	2.108	2.012	2.014
D.F.	34	38	37	39

S205 - APPENDECTOMY (SP) FEE VARIABLE: RELATIVE FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3	EQUATION 4
SPPOP	8.222	10.840	4.458	
	(1.527)	(5.504) **	(0.749)	
	1.211	1.597	0.657	
NURSHP	-0.172	-0.180		
	(-2.225) **	(-3.804) **		
	-1.702	-1.778		
BEDMSP	0.183	0.210	-0.025	0.064
	(2.176) **	(3.539) **	(-0.457)	(2.021) **
	0.982	1.130	-0.135	0.638
PCT60	0.458			
	(0.080)			
	0.112			
URATE	7.057E-03	7.583E-03	2.549E-03	
	(2.462) **	(3.904) **	(0.938)	
	0.090	0.097	0.033	
DPCI	8.434E-07			
	(0.046)			
	0.018			
SRELFEE	-0.012	-0.012	-3.129E-03	-3.082E-03
	(-2.527) **	(-2.970) **	(-0.729)	(-1.285)
	-0.193	-0.191	-0.049	-0.090
T	-1.453E-03		-3.907E-03	-2.640E-03
	(-0.305)		(-1.872) *	(-6.536) **
	-0.066		-0.178	-0.222
Q1	0.030	-0.028	-0.024	-0.014
	(-2.181) **	(-3.599) **	(-3.072) **	(-3.009) **
Q2	0.241	0.026	0.023	0.013
	(2.712) **	(3.554) **	(2.773) **	(2.617) **
Q4	-0.021	-0.023	-0.019	-0.010
	(-2.373) **	(-3.144) **	(-2.207) **	(-2.060) **
EBD	0.031	0.271	7.566E-03	
	(1.461)	(2.152) **	(0.477)	
CONSTANT	0.321	0.087	0.395	0.215
	(0.614)	(0.339)	(0.597)	(1.979) *
R-BAR SQUARED	0.928	0.933	0.923	0.943
S.E.E.	0.019	0.018	0.020	0.012
DURBIN-WATSON	2.058	2.072	1.951	1.908
D.F.	34	37	37	40

S205 - APPENDECTOMY (SP) FEE VARIABLE: REAL FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3	EQUATION 4
SPPOP	5.639		4.138	
	(0.975)		(0.746)	
	0.831		0.610	
NURSHP	-0.165	-0.212		
	(-2.086) **	(-5.537) **		
	-1.631	-2.098		
BEDMSP	0.203	0.385	0.042	0.076
	(2.074) **	(10.386) **	(0.634)	(1.831) *
	1.091	2.071	0.225	0.753
PCT60	5.334			
	(0.996)			
	1.303			
URATE	4.646E-03	5.038E-03	1.668E-03	
	(1.694) *	(1.547)	(0.642)	
	0.060	0.065	0.021	
DPCI	1.415E-06			
	(0.787)			
	0.031			
DSFEE	-9.142E-04	-1.070E-03	-6.469E-04	-1.940E-04
	(-2.395) **	(-2.589) **	(-1.749) *	(-0.914)
	-0.238	-0.279	-0.169	-0.093
T	-4.664E-03		-3.302E-03	-2.298E-03
	(0.971)		(-1.793) *	(-5.472) **
	-0.212		-0.150	-0.193
Q1	-0.043	-0.040	-0.028	-0.015
	(-3.031) **	(-4.690) **	(-3.456) **	(-3.129) **
Q2	0.212	0.026	0.024	0.014
	(2.411) **	(3.359) **	(2.846) **	(2.756) **
Q4	-0.019	-0.023	-0.019	-0.011
	(-2.122) **	(-2.998) **	(-2.315) **	(-2.164) **
EBD	0.037	0.025	0.011	
	(1.697) *	(1.466)	(0.718)	
CONSTANT	-0.131	0.729	0.274	0.171
	(-0.258)	(3.344) **	(0.452)	(1.349)
R-BAR SQUARED	0.930	0.920	0.927	0.942
S.E.E.	0.019	0.020	0.019	0.012
DURBIN-WATSON	2.059	1.989	1.949	1.920
D.F.	34	38	37	40

S247 - HAEMORRHOIDECTOMY (SP) FEE VARIABLE: RELATIVE FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3	EQUATION 4
SPPOP	-4.896	12.819	-2.552	-2.410
	(-1.276)	(5.659) **	(-0.841)	(0.731)
	-1.390	3.640	-0.725	-0.684
NURSHP	0.093	0.049	0.051	
	(1.674)	(1.462)	(1.526)	
	1.780	0.929	0.963	
BEDMSP	0.020		0.042	0.111
	(0.358)		(0.735)	(3.064) **
	0.209		0.437	1.154
PCT60	-3.344			
	(-0.845)			
	-1.575			
URATE	-1.504E-03			
	(-0.681)			
	-0.037			
DPCI	-8.691E-06			
	(-0.639)			
	-0.367			
SRELFEE	-3.705E-03	4.789E-03	-2.173E-03	-3.545E-03
	(-0.983)	(0.971)	(-0.642)	(-1.030)
	-0.103	0.133	-0.060	-0.098
T	-2.982E-03		-4.528E-03	-3.616E-03
	(-0.959)		(-4.332) **	(-3.761) **
	-0.262		-0.397	-0.317
Q1	0.076	0.078	0.069	0.068
	(6.627) **	(9.976) **	(8.261) **	(8.043) **
Q2	0.062	0.066	0.061	0.062
	(8.334) **	(11.167) **	(9.163) **	(9.117) **
Q4	0.018	0.014	0.018	0.017
	(2.315) **	(2.315) **	(2.731) **	(2.560) **
EBD	2.883E-03			
	(0.189)			
CONSTANT	0.790	-1.157	0.199	0.249
	(2.102) **	(-3.863) **	(0.653)	(0.747)
R-BAR SQUARED	0.954	0.934	0.954	0.953
S.E.E.	0.015	0.017	0.015	0.015
DURBIN-WATSON	1.984	1.995	1.979	1.980
D.F.	34	40	38	39

S247 - HAEMORRHOIDECTOMY (SP) FEE VARIABLE: REAL FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3	EQUATION 4
SPPOP	-5.033	-2.656	-2.281	-2.264
	(-1.212)	(-0.873)	(-0.740)	(-0.656)
	-1.429	-0.754	-0.648	-0.643
NURSHP	0.092	0.074	0.056	
	(1.603)	(2.943) **	(1.764) *	
	1.744	1.405	1.075	
BEDMSP	0.020		0.057	0.131
	(0.334)		(0.864)	(2.424) **
	0.211		0.594	1.356
PCT60	-1.946			
	(-0.505)			
	-0.917			
URATE	-2.015E-03			
	(-0.939)			
	-0.050			
DPCI	-1.067E-05			
	(-0.765)			
	-0.451			
DSFEE	-1.749E-04	-5.911E-05	-2.208E-04	-2.450E-04
	(-0.579)	(-0.279)	(-0.781)	(-0.806)
	-0.080	-0.027	-0.101	-0.112
T	-3.612E-03	-4.944E-03	-4.251E-03	-3.167E-03
	(-1.089)	(-5.962) **	(-3.782) **	(-2.915) **
	-0.317	-0.434	-0.373	-0.278
Q1	0.073	0.070	0.069	0.067
	(6.167) **	(8.671) **	(8.320) **	(8.019) **
Q2	0.062	0.061	0.061	0.063
	(8.302) **	(9.601) **	(9.312) **	(9.279) **
Q4	0.018	0.018	0.018	0.017
	(2.420) **	(2.935) **	(2.698) **	(2.489) **
EBD	4.198E-03			
	(0.260)			
CONSTANT	0.652	0.207	0.100	0.168
	(1.784) *	(0.658)	(0.293)	(0.444)
R-BAR SQUARED	0.953	0.954	0.954	0.952
S.E.E.	0.015	0.014	0.014	0.015
DURBIN-WATSON	1.993	1.983	1.977	1.973
D.F.	34	39	38	39

S287 - CHOLECYSTECTOMY (SP) FEE VARIABLE: RELATIVE FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3	EQUATION 4
SPPOP'	-12.248		12.548	
	(-0.676)		(0.882)	
	-0.807		0.827	
NURSHP	0.163			
	(0.711)			
	0.723			
BEDMSP	0.337	0.716	0.772	0.174
	(1.267)	(3.954) **	(4.389) **	(0.694)
	0.812	1.723	1.858	0.418
PCT60	20.223	14.295		
	(1.298)	(1.124)		
	2.211	1.563		
URATE	-4.358E-03			
	(-0.479)			
	-0.025			
DPCI	4.701E-05			
	(0.926)			
	0.461			
SRELFEE	-6.545E-03	-3.988E-03	-0.011	-9.138E-03
	(-0.648)	(-0.447)	(-1.711) *	(-1.105)
	-0.089	-0.054	-0.154	-0.124
T	-0.263	-0.010	2.044E-03	-8.504E-03
	(-2.106) **	(-1.178)	(0.463)	(-1.912) *
	-0.537	-0.208	0.042	-0.173
Q1	0.170	0.186	0.213	0.195
	(4.919) **	(7.306) **	(11.007) **	(12.039) **
Q2	0.150	0.167	0.178	0.170
	(7.073) **	(8.782) **	(9.996) **	(10.382) **
Q4	0.103	0.090	0.079	0.088
	(4.826) **	(4.810) **	(4.379) **	(5.333) **
EBD	0.573			
	(0.988)			
CONSTANT	-2.389	-2.742	-2.162	1.110
	(-1.046)	(-1.814) *	(-1.451)	(1.182)
R-BAR SQUARED	0.899	0.896	0.895	0.900
S.E.E.	0.048	0.048	0.049	0.048
DURBIN-WATSON	2.012	1.915	1.900	2.006
D.F.	34	39	39	40

S287 - CHOLECYSTECTOMY (SP) FEE VARIABLE: REAL FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3	EQUATION 4
SPPOP	12.413 (0.762) 0.818		-4.939 (-0.306) -0.326	
NURSHP	0.150 (0.721) 0.662			
BEDMSP	0.145 (0.504) 0.349		0.164 (0.589) 0.394	0.200 (0.776) 0.482
PCT60	34.713 (2.525) ** 3.796	43.169 (5.044) ** 4.720		
URATE	-1.121E-03 (-0.132) -6.426E-03			
DPCI	-2.584E-05 (-0.554) -0.254			
DSFEE	1.557E-03 (2.136) ** 0.348	2.281E-03 (5.033) ** 0.510	5.160E-04 (0.620) 0.115	5.044E-04 (0.615) 0.113
T	-0.024 (-1.996) * -0.479	-0.033 (-5.606) ** -0.676	-7.309E-03 (-1.236) -0.149	-5.674E-03 (-1.590) -0.116
Q1	0.187 (5.326) **	0.164 (7.630) **	0.200 (9.132) **	0.203 (10.115) **
Q2	0.152 (7.631) **	0.143 (8.356) **	0.172 (9.838) **	0.174 (10.329) **
Q4	0.103 (5.194) **	0.112 (6.600) **	0.086 (4.849) **	0.084 (5.004) **
EBD	0.031 (0.556)			
CONSTANT	-5.624 (-3.409) **	-4.727 (-4.277) **	1.206 (0.584)	0.621 (0.649)
R-BAR SQUARED	0.907	0.902	0.896	0.898
S.E.E.	0.046	0.047	0.048	0.048
DURBIN-WATSON	2.000	1.921	2.011	2.010
D.F.	34	40	39	40

S323 - HERNIOTOMY (GP/FP) FEE VARIABLE: RELATIVE FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3
GPPOP	-0.181	-0.177	0.164
	(-1.903) *	(-1.941) *	(1.229)
	-1.811	-1.774	1.645
NURSHP	0.057	0.054	
	(1.401)	(2.666) **	
	3.796	3.603	
BEDMSP	0.041	0.034	-0.042
	(1.261)	(1.305)	(-1.163)
	1.466	1.217	-1.513
PCT60	-9.018	-8.974	
	(-4.675) **	(-6.773) **	
	-15.229	-15.154	
URATE	1.589E-03	2.109E-03	-5.595E-04
	(1.305)	(3.079) **	(-0.650)
	0.142	0.189	-0.050
DPCI	-4.145E-06		
	(-0.679)		
	-0.625		
GRELFEE	4.333E-04	2.864E-04	2.001E-03
	(0.296)	(0.211)	(0.631)
	0.046	0.031	0.214
T	7.109E-03	6.768E-03	-1.193E-03
	(4.427) **	(4.791) **	(-1.412)
	2.563	2.441	-0.430
Q1	0.046	0.045	0.026
	(7.188) **	(8.366) **	(6.259) **
Q2	0.026	0.025	0.018
	(6.260) **	(6.226) **	(5.475) **
Q4	5.753E-03	5.883E-03	0.124
	(1.380)	(1.439)	(3.799) **
EBD	-2.892E-05		
	(-4.143E-03)		
CONSTANT	0.897	0.880	0.084
	(5.981) **	(6.071) **	(1.059)
R-BAR SQUARED	0.758	0.770	0.622
S.E.E.	6.551E-03	6.385E-03	8.184E-03
DURBIN-WATSON	1.916	1.912	1.834
D.F.	25	27	29

S323 - HERNIOTOMY (GP/FP) FEE VARIABLE: REAL FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3	EQUATION 4
GPPOP	-0.166	-0.165	-0.165	0.198
	(-1.736) *	(-1.782) *	(-1.782) *	(1.466)
	-1.664	-1.651	-1.651	1.983
NURSHP	0.061	0.055	0.055	
	(1.603)	(2.780) **	(2.780) **	
	4.115	3.688	3.688	
BEDMSP	0.041	0.037	0.037	-0.023
	(1.297)	(1.372)	(1.372)	(-0.492)
	1.475	1.339	1.339	-0.826
PCT60	-9.126	-8.925	-8.925	
	(-4.930) **	(-6.721) **	(-6.721) **	
	-15.412	-15.071	-15.071	
URATE	1.567E-03	2.079E-03	2.079E-03	-5.193E-04
	(1.290)	(3.039) **	(3.039) **	(-0.572)
	0.140	0.186	0.186	-0.046
DPCI	-3.521E-06			
	(-0.583)			
	-0.531			
DGFEE	-5.423E-05	-5.956E-05	-5.956E-05	-1.912E-04
	(-0.383)	(-0.433)	(-0.433)	(-0.745)
	-0.099	-0.109	-0.109	-0.350
T	7.076E-03	6.725E-03	6.725E-03	-1.135E-03
	(4.413) **	(4.766) **	(4.766) **	(-1.277)
	2.552	2.425	2.425	-0.409
Q1	0.046	0.045	0.045	0.024
	(7.152) **	(8.222) **	(8.222) **	(5.480) **
Q2	0.026	0.025	0.025	0.018
	(6.307) **	(6.381) **	(6.381) **	(5.371) **
Q4	5.775E-03	5.918E-03	5.918E-03	0.012
	(1.399)	(1.481)	(1.481)	(3.720) **
EBD	-7.847E-04			
	(-0.117)			
CONSTANT	0.878	0.858	0.858	0.042
	(5.528) **	(5.600) **	(5.600) **	(0.402)
R-BAR SQUARED	0.758	0.771	0.771	0.623
S.E.E.	6.544E-03	6.370E-03	6.370E-03	8.174E-03
DURBIN-WATSON	1.918	1.912	1.912	1.806
D.F.	25	27	27	29

S323 - HERNIOTOMY (SP) FEE VARIABLE: RELATIVE FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2@	EQUATION 3@	EQUATION 4@
SPPOP	11.007		6.847	
	(0.879)		(0.629)	
	1.857		1.155	
NURSHP	0.079			
	(0.305)			
	0.903			
BEDMSP	-0.019			-0.156
	(-0.098)			(-1.445)
	-0.117			-0.959
PCT60	-23.343	-15.357		
	(-1.696)	(-2.116) **		
	-6.767	-4.452		
URATE	6.282E-03			
	(0.683)			
	0.096			
DPCI	1.213E-05			
	(1.348)			
	0.314			
SRELFEE	-2.657E-04	-4.295E-03	2.280E-03	2.648E-03
	(-0.266)	(-0.578)	(0.302)	(0.405)
	-5.354E-03	-0.087	0.046	0.053
T	0.020	0.012	2.646E-03	-8.792E-04
	(1.831) *	(2.158) **	(0.747)	(-0.806)
	1.209	0.714	0.164	-0.054
Q1	0.156	0.136	0.119	0.115
	(4.977) **	(8.028) **	(7.584) **	(7.886) **
Q2	0.070	0.061	0.052	0.048
	(4.065) **	(4.107) **	(3.499) **	(3.476) **
Q4	0.037	0.045	0.053	0.057
	(2.168) **	(3.089) **	(3.547) **	(4.070) **
EBD	-0.061	-0.036	-0.023	
	(-1.433)	(-1.499)	(-0.859)	
CONSTANT	1.705	2.363	-0.234	0.928
	(1.089)	(2.553) **	(-0.225)	(2.768) **
R-BAR SQUARED	0.601	0.617	0.574	0.600
S.E.E.	0.033	0.032	0.034	0.033
DURBIN-WATSON	1.376	1.408	1.337	1.423
D.F.	25	33	33	34

S323 - HERNIOTOMY (SP) FEE VARIABLE: REAL FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2@	EQUATION 3@	EQUATION 4@
SPPOP	3.853		4.652	
	(0.300)		(0.421)	
	0.650		0.785	
NURSHP	0.057			
	(0.227)			
	0.654			
BEDMSP	0.147			-0.139
	(0.621)			(-1.006)
	0.903			-0.851
PCT60	-30.732	-15.182		
	(-2.323) **	(-2.242) **		
	-8.909	-4.401		
URATE	6.971E-03			
	(0.773)			
	0.107			
DPCI	2.719E-05			
	(0.777)			
	0.704			
DSFEE	-1.044E-03	-5.707E-04	-3.214E-04	1.119E-07
	(-1.089)	(-1.150)	(-0.585)	(1.896E-04)
	-0.355	-0.194	-0.109	3.803E-05
T	0.023	0.012	1.312E-03	-1.090E-03
	(2.265) **	(2.209) **	(0.396)	(-0.991)
	1.447	0.716	0.081	-0.067
Q1	0.154	0.132	0.116	0.115
	(5.216) **	(8.002) **	(7.062) **	(7.625) **
Q2	0.075	0.061	0.050	0.048
	(4.404) **	(4.174) **	(3.436) **	(3.455) **
Q4	0.033	0.045	0.054	0.057
	(1.940) *	(3.107) **	(3.695) **	(4.100) **
EBD	-0.059	-0.284	-8.452E-03	
	(-1.465)	(-1.154)	(-0.305)	
CONSTANT	2.851	2.391	0.069	0.907
	(1.814) *	(2.837) **	(0.065)	(2.309) **
R-BAR SQUARED	0.617	0.628	0.577	0.598
S.E.E.	0.032	0.032	0.034	0.033
DURBIN-WATSON	1.381	1.443	1.355	1.415
D.F.	25	33	33	34

S655 - ENDOSCOPY, TURP (SP)   FEE VARIABLE: RELATIVE FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3
SPPOP	8.919	-0.139	15.605
	(0.785)	(-0.011)	(1.623)
	0.781	-0.012	1.367
NURSHP	0.090		
	(0.620)		
	0.528		
BEDMSP	0.049		0.234
	(0.269)		(2.252) **
	0.156		0.747
PCT60	2.940		
	(0.304)		
	0.427		
URATE	-3.261E-04		
	(-0.056)		
	-2.485E-03		
DPCI	-9.998E-06		
	(-0.286)		
	-0.130		
SRELFEE	-0.012	-2.583E-03	-0.011
	(-1.664)	(-0.335)	(-2.093) **
	-0.217	-0.046	-0.200
T	1.333E-03	3.310E-03	8.015E-03
	(0.153)	(1.015)	(2.956) **
	0.036	0.090	0.217
Q1	0.104		0.106
	(4.522) **		(9.484) **
Q2	0.664	0.017	0.073
	(4.949) **	(0.522)	(6.870) **
Q4	0.089	0.043	0.081
	(6.685) **	(1.264)	(7.474) **
EBD	0.045		
	(1.082)		
CONSTANT	-0.639	0.943	-1.174
	(-0.571)	(0.862)	(-1.218)
R-BAR SQUARED	0.830	0.706	0.835
S.E.E.	0.035	0.045	0.034
DURBIN-WATSON	2.150	1.821	2.043
D.F.	34	41	39

S655 - ENDOSCOPY, TURP (SP) FEE VARIABLE: REAL FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3	EQUATION 4
SPPOP	12.841	4.732	14.571	7.535
	(1.057)	(0.378)	(1.207)	(0.633)
	1.125	0.415	1.276	0.660
NURSHP	0.146			
	(0.989)			
	0.858			
BEDMSP	-0.134		0.081	0.078
	(-0.641)		(0.440)	(0.410)
	-0.430		0.258	0.250
PCT60	5.130			
	(0.515)			
	0.745			
URATE	-2.639E-03			
	(-0.380)			
	-0.020			
DPCI	-3.363E-05	-3.562E-05	-3.749E-05	
	(-0.987)	(-1.012)	(-1.233)	
	-0.438	-0.464	-0.489	
DSFEE	1.442E-04	6.393E-04	2.850E-04	5.675E-05
	(0.279)	(1.632)	(0.559)	(0.116)
	0.043	0.189	0.084	0.017
T	3.751E-03	8.526E-03	0.012	7.173E-03
	(0.421)	(1.787) *	(2.405) **	(1.901) *
	0.102	0.231	0.312	0.194
Q1	0.107		0.111	0.101
	(4.362) **		(7.624) **	(8.537) **
Q2	0.070	0.013	0.078	0.074
	(5.354) **	(0.355)	(7.122) **	(6.977) **
Q4	0.087	0.036	0.080	0.081
	(6.745) **	(0.948)	(7.400) **	(7.457) **
EBD	0.010			
	(0.249)			
CONSTANT	-1.033	0.608	-0.500	-0.184
	(-0.814)	(0.590)	(-0.391)	(-0.135)
R-BAR SQUARED	0.823	0.712	0.824	0.823
S.E.E.	0.035	0.045	0.035	0.035
DURBIN-WATSON	2.207	1.846	2.053	2.017
D.F.	34	40	38	39

S754 - DIAGNOSTIC CURETTAGE (GP/FP)   FEE VARIABLE: RELATIVE FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3
GPPOP	0.867	0.762	0.888
	(1.622)	(1.577)	(1.898) *
	1.297	1.140	1.328
NURSHP	0.219	0.119	
	(1.265)	(0.933)	
	2.215	1.199	
BEDMSOBP	-0.185	-0.100	6.772E-03
	(-1.075)	(-0.656)	(0.054)
	-1.138	-0.615	0.042
PCT60	-2.418		
	(-0.225)		
	-0.604		
URATE	-0.010	-7.632E-03	-5.052E-03
	(-1.472)	(-1.568)	(-1.232)
	-0.134	-0.100	-0.066
DPCI	8.270E-06		
	(0.287)		
	0.185		
GRELFEE	-0.052	-0.057	-0.068
	(-2.453) **	(-3.033) **	(-4.489) **
	-0.272	-0.303	-0.361
T	-0.021	-0.021	-0.019
	(-3.103) **	(-6.819) **	(-6.345) **
	-0.967	-0.962	-0.899
Q1	0.047	0.041	0.034
	(1.850) *	(2.192) **	(2.050) **
Q2	0.052	0.052	0.053
	(3.337) **	(3.948) **	(4.221) **
Q4	0.032	0.032	0.031
	(2.018) *	(2.478) **	(2.528) **
EBD	-0.030		
	(-0.697)		
CONSTANT	0.209	0.333	0.515
	(0.239)	(0.863)	(1.592)
R-BAR SQUARED	0.982	0.983	0.983
S.E.E.	0.033	0.032	0.031
DURBIN-WATSON	1.895	1.894	1.894
D.F.	34	37	38

S754 - DIAGNOSTIC CURETTAGE (GP/FP)   FEE VARIABLE: REAL FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3
GPPOP	0.964	0.818	1.075
	(1.666)	(1.612)	(2.204) **
	1.442	1.224	1.608
NURSHP	0.267	0.174	
	(1.517)	(1.327)	
	2.696	1.760	
BEDMSOBP	-0.196	-0.104	0.060
	(-1.126)	(-0.665)	(0.486)
	-1.209	-0.640	0.367
PCT60	-0.515		
	(-0.049)		
	-0.129		
URATE	-0.013	-9.184E-03	-5.371E-03
	(-1.935) *	(-1.898) *	(-1.334)
	-0.174	-0.120	-0.070
DPCI	5.574E-06		
	(0.186)		
	0.125		
DGFEE	-2.439E-03	-2.798E-03	-3.757E-03
	(-1.921) *	(-2.400) **	(-4.033) **
	-0.253	-0.290	-0.389
T	-0.022	-0.021	-0.019
	(-3.375) **	(-6.918) **	(-6.147) **
	-1.021	-0.957	-0.865
Q1	0.041	0.038	0.025
	(1.533)	(1.798) *	(1.352)
Q2	0.052	0.053	0.055
	(3.179) **	(3.759) **	(4.066) **
Q4	0.033	0.032	0.031
	(2.015) *	(2.323) **	(2.360) **
EBD	-0.037		
	(-0.827)		
CONSTANT	-0.299	-0.174	0.171
	(-0.385)	(-0.052)	(0.574)
R-BAR SQUARED	0.981	0.981	0.981
S.E.E.	0.033	0.033	0.033
DURBIN-WATSON	1.902	1.886	1.871
D.F.	34	37	38

```
S754 - DIAGNOSTIC CURETTAGE (SP)     FEE VARIABLE: RELATIVE FEE
DEPENDENT VARIABLE: UTILP

VARIABLE        EQUATION 1          EQUATION 2@       EQUATION 3@
-----------------------------------------------------------------
SPPOP               35.546                              -13.012
                   (0.717)                             (-0.352)
                     0.644                               -0.236

NURSHP              -0.402
                  (-0.626)
                    -0.667

BEDMSOBP            -0.428                               -1.040
                  (-0.790)                             (-3.361) **
                    -0.433                               -1.053

PCT60              -43.073
                  (-1.180)
                    -1.769

URATE                0.049               0.015
                   (2.081) **          (0.725)
                     0.106               0.033

DPCI             8.458E-05
                   (0.808)
                     0.312

SRELFEE             -0.107              -0.076           -0.071
                  (-1.537)            (-1.276)         (-1.378)
                    -0.109              -0.077           -0.073

T                   -0.017              -0.031           -0.044
                  (-0.768)            (-7.012) **      (-7.360) **
                    -0.133              -0.240           -0.340

Q1                   0.192           1.799E-01            0.172
                   (2.169) **          (4.163) **       (3.934) **

Q2                   0.406               0.392            0.378
                   (7.830) **         (10.216) **       (9.464) **

Q4                   0.248               0.263            0.280
                   (4.613) **          (6.910) **       (7.026) **

EBD                 -0.243              -0.351           -0.231
                  (-2.065) **         (-3.360) **      (-2.543) **

CONSTANT            10.383               4.282            9.179
                   (2.768) **         (11.851) **       (4.420) **

-----------------------------------------------------------------
R-BAR SQUARED        0.961               0.950            0.958
S.E.E.               0.104               0.118            0.108
DURBIN-WATSON        1.880               1.954            1.914
D.F.                    34                  42               41
```

S754 - DIAGNOSTIC CURETTAGE (SP) FEE VARIABLE: REAL FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2@	EQUATION 3@	EQUATION 4@
SPPOP	23.178		-16.749	-16.635
	(0.493)		(-0.480)	(-0.487)
	0.420		-0.304	-0.302
NURSHP	-0.236			
	(-0.374)			
	-0.392			
BEDMSOBP	-0.230		-0.862	-0.863
	(-0.401)		(-2.544) **	(-2.577) **
	-0.233		-0.873	-0.873
PCT60	-51.338			
	(-1.579)			
	-2.108			
URATE	0.047	-4.256E-03		
	(2.053) **	(-0.139)		
	0.101	-9.162E-03		
DPCI	1.275E-04	-2.856E-04	1.604E-06	
	(1.285)	(-3.888) **	(0.020)	
	0.470	-1.052	5.909E-03	
DSFEE	-7.894E-03	5.642E-03	-5.174E-03	-5.152E-03
	(-2.119) **	(1.496)	(-1.664)	(-1.779) *
	-0.157	0.112	-0.103	-0.102
T	-0.012		-0.043	-0.043
	(-0.583)		(-5.917) **	(-7.330) **
	-0.091		-0.327	-0.326
Q1	0.190	0.239	0.160	0.160
	(2.324) **	(4.832) **	(3.517) **	(3.710) **
Q2	0.414	0.421	0.381	0.381
	(7.593) **	(10.191) **	(9.281) **	(9.443) **
Q4	0.241	0.259	0.279	0.279
	(4.338) **	(6.235) **	(6.836) **	(6.928) **
EBD	-0.249	-0.489	-0.210	-0.209
	(-2.220) **	(-3.663) **	(-2.305) **	(-2.386) **
CONSTANT	10.179	6.576	8.831	8.841
	(3.272) **	(5.608) **	(4.622) **	(4.906) **
R-BAR SQUARED	0.962	0.929	0.958	0.959
S.E.E.	0.102	0.141	0.108	0.107
DURBIN-WATSON	1.897	1.810	1.930	1.930
D.F.	34	42	40	41

S757 - HYSTERECTOMY (SP) FEE VARIABLE: RELATIVE FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3	EQUATION 4
SPPOP	4.879	6.373	7.895	8.815
	(1.185)	(2.746) **	(3.673) **	(5.366) **
	0.824	1.076	1.333	1.488
NURSHP	0.260	0.142	0.053	
	(1.454)	(1.974) *	(1.165)	
	1.602	0.874	0.325	
BEDMSOBP	-0.068			0.058
	(-0.501)			(0.986)
	-0.254			0.216
PCT60	-10.570	-6.911		
	(-1.379)	(-1.628)		
	-1.607	-1.051		
URATE	-2.791E-03			
	(-0.392)			
	-0.022			
DPCI	-3.578E-05	-4.451E-05	-4.732E-05	-5.628E-05
	(-1.083)	(-2.255) **	(-2.272) **	(-3.087) **
	-0.488	-0.607	-0.645	-0.768
SRELFEE	9.251E-03	8.343E-03	0.012	0.011
	(1.427)	(1.589)	(2.356) **	(2.031) **
	0.132	0.119	0.167	0.153
T	6.680E-03	5.650E-03	1.726E-03	3.138E-03
	(1.498)	(2.106) **	(1.085)	(2.233) **
	0.189	0.160	0.049	0.089
Q1	0.188	0.176	0.158	0.157
	(8.222) **	(10.101) **	(11.504) **	(11.205) **
Q2	0.146	0.144	0.139	0.141
	(10.368) **	(10.616) **	(10.228) **	(10.117) **
Q4	2.568E-03			
	(0.180)			
EBD	-0.020			
	(-0.715)			
CONSTANT	0.502	0.321	-0.289	-0.242
	(0.975)	(0.790)	(-1.618)	(-1.493)
R-BAR SQUARED	0.865	0.875	0.870	0.869
S.E.E.	0.032	0.030	0.031	0.031
DURBIN-WATSON	2.088	2.091	2.074	2.076
D.F.	34	38	39	39

S757 - HYSTERECTOMY (SP) FEE VARIABLE: REAL FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3	EQUATION 4
SPPOP	3.622		7.273	7.847
	(0.939)		(3.415) **	(5.167) **
	0.612		1.228	1.325
NURSHP	0.298	0.336	0.019	
	(1.762) *	(4.308) **	(0.357)	
	1.832	2.064	0.115	
BEDMSOBP	-0.155	-0.164		9.185E-04
	(-1.148)	(-1.323)		(0.013)
	-0.581	-0.615		3.443E-03
PCT60	-12.743	-12.508		
	(-1.916) *	(-2.896) **		
	-1.938	-1.902		
URATE	-3.610E-03			
	(-0.568)			
	-0.029			
DPCI	-4.577E-05	-1.757E-05	-5.020E-05	-5.497E-05
	(-1.562)	(-0.875)	(-2.201) **	(-3.083) **
	-0.624	-0.240	-0.685	-0.750
DSFEE	6.620E-04	5.834E-04	5.323E-04	5.719E-04
	(2.561) **	(1.854) *	(2.314) **	(2.142) **
	0.186	0.164	0.150	0.161
T	7.230E-03	4.850E-03	1.485E-03	1.891E-03
	(1.856) *	(1.324)	(0.938)	(1.589)
	0.205	0.137	0.042	0.054
Q1	0.200	0.197	0.162	0.162
	(8.936) **	(11.781) **	(11.561) **	(11.409) **
Q2	0.146	0.143	0.138	0.139
	(10.697) **	(11.335) **	(10.146) **	(10.122) **
Q4	2.490E-03			
	(0.180)			
EBD	-0.021			
	(-0.804)			
CONSTANT	1.167	1.215	0.064	0.118
	(2.265) **	(2.531) **	(0.245)	(0.461)
R-BAR SQUARED	0.875	0.869	0.871	0.871
S.E.E.	0.030	0.031	0.031	0.031
DURBIN-WATSON	2.136	2.062	2.068	2.073
D.F.	34	38	39	39

Z327 -BRONCHOSCOPY FEE VARIABLE: RELATIVE FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3	EQUATION 4
SPPOP	-10.407	-10.022	-8.926	-8.588
	(-2.387) **	(-2.331) **	(-2.129) **	(-1.679)
	-3.352	-3.228	-2.875	-2.766
NURSHP	-0.019			
	(-0.351)			
	-0.419			
BEDMSP	0.170	0.176	0.176	0.023
	(2.612) **	(4.155) **	(4.111) **	(0.311)
	1.998	2.072	2.072	0.274
PCT60	2.918			
	(0.816)			
	1.559			
URATE	-3.753E-03	-2.989E-03		
	(-1.306)	(-1.169)		
	-0.105	-0.084		
DPCI	3.260E-05	3.508E-05	3.750E-05	
	(3.569) **	(4.169) **	(4.614) **	
	1.563	1.682	1.798	
RELFEE	0.013	0.012	0.087	0.010
	(1.155)	(1.265)	(0.942)	(0.941)
	0.190	0.186	0.130	0.153
T	-4.802E-04	1.548E-03	1.400E-03	1.725E-03
	(-0.167)	(1.012)	(0.909)	(0.853)
	-0.048	0.154	0.139	0.172
Q1	0.013	0.018	0.019	0.019
	(1.590)	(3.710) **	(3.825) **	(3.749) **
Q2	0.021	0.023	0.023	0.024
	(4.679) **	(6.438) **	(6.346) **	(6.108) **
Q4	0.024	0.022	0.022	0.024
	(5.376) **	(6.044) **	(6.045) **	(5.842) **
EBD	0.049	0.043	0.051	0.021
	(3.289) **	(3.350) **	(4.505) **	(1.238)
CONSTANT	-0.124	0.036	-0.093	0.838
	(-0.246)	(8.024E-02)	(-0.212)	(1.335)
R-BAR SQUARED	0.972	0.973	0.973	0.963
S.E.E.	0.012	0.012	0.012	0.014
DURBIN-WATSON	1.899	1.894	1.891	2.020
D.F.	34	36	37	38

Z327 -BRONCHOSCOPY FEE VARIABLE: REAL FEE
DEPENDENT VARIABLE: UTILP

VARIABLE	EQUATION 1	EQUATION 2	EQUATION 3
SPPOP	-10.610	-10.459	-8.314
	(-2.381) **	(-2.383) **	(-1.613)
	-3.417	-3.369	-2.678
NURSHP	-0.034		
	(-0.567)		
	-0.745		
BEDMSP	0.160	0.150	0.021
	(2.436) **	(2.905) **	(0.278)
	1.883	1.769	0.247
PCT60	2.306		
	(0.636)		
	1.232		
URATE	-2.824E-03	-2.678E-03	
	(-0.974)	(-1.059)	
	-0.079	-0.075	
DPCI	3.251E-05	3.519E-05	
	(3.578) **	(4.180) **	
	1.558	1.687	
DFEE	6.963E-04	5.825E-04	4.400E-04
	(1.061)	(1.188)	(0.653)
	0.173	0.145	0.109
T	-5.954E-04	7.158E-04	1.504E-03
	(-0.202)	(0.436)	(0.766)
	-0.059	0.071	0.150
Q1	0.015	0.019	0.020
	(1.840) *	(3.950) **	(3.736) **
Q2	0.021	0.022	0.023
	(4.596) **	(6.075) **	(5.984) **
Q4	0.024	0.023	0.025
	(5.501) **	(6.346) **	(6.021) **
EBD	0.053	0.047	0.023
	(3.486) **	(3.679) **	(1.371)
CONSTANT	0.099	0.183	0.836
	(0.174)	(0.378)	(1.333)
R-BAR SQUARED	0.972	0.973	0.963
S.E.E.	1.546E-04	0.012	0.014
DURBIN-WATSON	1.927	1.914	2.025
D.F.	34	36	38

APPENDIX G

ASSESSMEMT OF THE SEVERITY OF MULTICOLLINEARITY

APPENDIX G

ASSESSMEMT OF THE SEVERITY OF MULTICOLLINEARITY

Between Fees and Other Independent Variables

To assess the extent of the multicollinearity problem we employed the methods outlined in Belsley et al. (1980) to determine how ill-conditioned the data matrix for each procedure was, and the degree to which the fee variable was implicated in a problem of collinearity. Though the judgement regarding the severity of multicollinearity is by nature somewhat subjective, Table B.1 categorizes the procedures according to whether there was strong, moderate, or no evidence for collinearity between the fee variable and the other independent variables. These results suggest that such collinearity is at least partly responsible for the lack of significant fee coefficients: for the relative fee variable, four of the eight procedures for which there was no evidence of collinearity the fee variable was significant, but for only one of the five procedures with strong evidence was this the case. Similarly, for the real fee variable, four of the nine procedures with no evidence of collinearity had significant fee coefficients, but only one of the nine with strong evidence did so.

TABLE G.1: CATEGORIZATION OF PROCEDURES BY SEVERITY OF COLLINEARITY AFFECTING FEE VARIABLES

	Relative Fee	
STRONG EVIDENCE	MODERATE EVIDENCE	NO EVIDENCE
K195 Family Therapy	R837SP** Multiple Ligation and Avulsion, Veins	G313GP Electrocardiogram - Professional Component
C062 Subsequent Hospital Visit, Orthopedic Surgery	K009 Annual Health Exam, age >14	K197 Individual Psychotherapy, Psychiatry
S655SP Endoscopy - Transurethral Resection of Prostate	S247SP Hemorrhoidectomy	R792** Carotid Endarterectomy
E140** Cataract: Excision, all types	J162 Diagnostic Ultrasound, Pelvic	A345 Consultation, Radiation Oncology
K013 Counselling, GP/FP	S063GP Tonsillectomy	G313SP Electrocardiogram - Professional Component
	Z327 Bronchoscopy	S063SP** Tonsillectomy
	S323SP Herniotomy	S754GP** Diagnostic Curettage
	C002 Subsequent Hospital Visit, GP/FP	S757SP** Hysterectomy
	R742** Coronary Artery Repair	
	S205SP** Appendectomy	
	S287SP** Cholecystectomy	
	K007 Individual Psychotherapy, GP/FP	
	J135 Diagnostic Ultrasound, Complete Abdominal Scan	
	S323GP Herniotomy	
	S754SP* Diagnostic Curettage	

TABLE G.1: CATEGORIZATION OF PROCEDURES BY SEVERITY OF COLLINEARITY AFFECTING FEE VARIABLES, continued...

Real Fee

STRONG EVIDENCE	MODERATE EVIDENCE	NO EVIDENCE
K009 Annual Health Exam, age >14	S247SP Hemorrhoidectomy	R837SP** Multiple Ligation and Avulsion, Veins
G313GP Electrocardiogram - Professional Component	K195 Family Therapy	J162 Diagnostic Ultrasound, Pelvic
C062 Subsequent Hospital Visit, Orthopedic Surgery	K197 Individual Psychotherapy, Psychiatry	Z327 Bronchoscopy
C002 Subsequent Hospital Visit GP/FP	S063GP Tonsillectomy	S655SP Endoscopy - Transurethral Resection of Prostate
E140** Cataract: Excision, all types	S757SP** Hysterectomy	A345* Consultation, Radiation Oncology
K013 Counselling, GP/FP	J135 Diagnostic Ultrasound, Complete Abdominal Scan	S323SP Herniotomy
R742 Coronary Artery Repair	R792 Carotid Endarterectomy	S063SP** Tonsillectomy
K007 Individual Psychotherapy, GP/FP	S323GP Herniotomy	S205SP Appendectomy
	G313GP** Electrocardiogram - Professional Component	S754GP** Diagnostic Curettage
	S287SP** Cholecystectomy	
	S754** Diagnostic Curettage	

** - significant at 5% level in utilization per capita equation
* - significant at 10% level in utilization per capita equation

APPENDIX H

REGRESSION RESULTS: DUMMY FEE VARIABLE

NOTES TO APPENDIX H

DEPENDENT VARIABLE

UTILP: Utilization per capita

INDEPENDENT VARIABLE

(See text, Table III.)

SUMMARY STATISTICS

S.E.E. : Standard Error of Estimate

D.F. : Degrees of Freedom

@ : indicates that the equation was estimated correcting for first-order autocorrelation (otherwise, the equation was estimated correcting for fourth-order autocorrelation).

* : indicates that the coefficient is statistically significant at the 10% level.

** : indicates that the coefficient is statistically significant at the 5% level.

Appendix H: A345 - CONSULTATION, RADIATION ONCOLOGY FEE VARIABLE: FEEDUM

INDEPENDENT VARIABLE	DEPENDENT VARIABLE UTILP
SPPOP	23.293 (3.906) ** 0.339
BEDMSP	-8.153E-04 (-0.023) -7.397E-03
URATE	2.681E-03 (1.497) 0.058
FEEDUM	8.106E-03 (0.413)
T	-1.001E-03 (-1.674) -0.078
Q2	0.013 (2.544) **
EBD	0.019 (1.022)
CONSTANT	0.209 (1.647)
R-BAR SQUARED	0.476
S.E.E.	0.017
DURBIN-WATSON	1.774
D.F.	38

Appendix H: C062 - SUBSEQUENT HOSPITAL VISIT, ORTHOPEDIC SURGERY FEE VARIABLE: FEEDUM

INDEPENDENT VARIABLE	DEPENDENT VARIABLE UTILP
SPPOP	-36.400
	(-2.139) **
	-0.635
BEDMSP	0.519
	(2.225) **
	0.961
URATE	0.020
	(1.665)
	0.307
FEEDUM	-0.010
	(-0.145)
T	0.015
	(3.107) **
	2.300
Q2	0.062
	(3.038) **
Q4	0.026
	(1.184)
CONSTANT	0.575
	(0.741)
R-BAR SQUARED	0.568
S.E.E.	0.065
DURBIN-WATSON	1.997
D.F.	39

Appendix H: G313 - ELECTROCARDIOGRAM, PROFESSIONAL COMPONENT FEE VARIABLE: FEEDUM

INDEPENDENT VARIABLE	DEPENDENT VARIABLE
	UTILP
GPPOP	5.893
	(1.004)
	0.360
BEDMSP	-1.147
	(-0.725)
	-0.258
URATE	-2.924E-03
	(-0.044)
	-1.566E-03
FEEDUM	-0.755
	(-1.896) *
T	0.106
	(3.475) **
	0.202
Q1	1.603
	(9.873) **
Q2	1.769
	(11.035) **
Q4	1.496
	(9.322) **
EBD	0.454
	(1.291)
CONSTANT	8.579
	(1.876) *
R-BAR SQUARED	0.960
S.E.E.	0.423
DURBIN-WATSON	1.755
D.F.	37

Appendix H: K195 - FAMILY THERAPY FEE VARIABLE: FEEDUM

INDEPENDENT VARIABLE	DEPENDENT VARIABLE UTILP
SPPOP	17.460 (1.306) 0.425
BEDPSP	
URATE	0.049 (1.210) 0.079
DPCI	1.855E-04 (1.971) * 0.518
FEEDUM	0.149 (0.875)
T	
Q1	0.636 (12.889) **
Q2	0.802 (19.541) **
Q4	0.635 (15.530) **
EBD	
CONSTANT	-0.389 (-0.247)
R-BAR SQUARED	0.953
S.E.E.	0.146
DURBIN-WATSON	1.977
D.F.	39

Appendix H: R742 - CORONARY ARTERY REPAIR FEE VARIABLE: FEEDUM

INDEPENDENT VARIABLE	DEPENDENT VARIABLE
	UTILP
SPPOP	-2.437 (-1.087) -0.503
BEDMSP	0.028 (2.513) ** 3.349
FEEDUM	7.965E-03 (3.138) **
T	1.522E-05 (0.099) 0.015
Q1	1.866E-03 (1.657)
Q2	1.852E-03 (1.810) *
EBD	4.871E-03 (1.543)
CONSTANT	-0.055 (-1.318)
R-BAR SQUARED	0.558
S.E.E.	3.612E-03
DURBIN-WATSON	2.067
D.F.	39

Appendix H: R792 - CAROTID ENDARTERECTOMY FEE VARIABLE: FEEDUM

INDEPENDENT VARIABLE	DEPENDENT VARIABLE UTILP
SPPOP	-2.061 (-1.008) -2.145
BEDMSP	-0.034 (-1.060) -1.300
URATE	2.001E-03 (2.021) * 0.181
FEEDUM	0.018 (3.990) **
T	-1.376E-04 (-0.114) -0.044
T2	-1.159E-05 (-0.915) -0.131
Q1	-9.744E-04 (-0.398)
Q2	5.193E-03 (2.221) **
EBD	-0.019 (-2.747) **
CONSTANT	0.356 (1.407)
R-BAR SQUARED	0.840
S.E.E.	6.912E-03
DURBIN-WATSON	1.998
D.F.	37

Appendix H: R837 - LIGATION & AVULSION, VEINS (SP)   FEE VARIABLE: FEEDUM

	DEPENDENT VARIABLE
INDEPENDENT VARIABLE	UTILP
SPPOP	-7.433 (-1.913) * -5.293
BEDMSP	-0.126 (-1.919) * -3.256
URATE	5.686E-03 (3.039) ** 0.375
FEEDUM	0.038 (3.276) **
T	-0.014 (-3.321) ** -3.939
T2	1.187E-04 (2.263) ** 1.253
Q1	7.656E-03 (2.102) **
Q2	8.028E-03 (3.027) **
Q4	-2.284E-04 (-0.085)
EBD	6.694E-03 (0.640)
CONSTANT	1.359 (2.862) **
R-BAR SQUARED	0.901
S.E.E.	8.600E-03
DURBIN-WATSON	2.136
D.F.	22

Appendix H: S205 - APPENDECTOMY (SP) FEE VARIABLE: FEEDUM

	DEPENDENT VARIABLE
INDEPENDENT VARIABLE	UTILP
SPPOP	4.525 (2.118) ** 1.233
BEDMSP	0.105 (4.101) ** 1.049
URATE	
FEEDUM	0.016 (2.715) **
T	-1.156E-03 (-1.868) * -0.097
Q1	-0.012 (-2.294) **
Q2	0.015 (2.802) **
Q4	-0.012 (-2.297) **
EBD	
CONSTANT	-0.380 (-1.757) *
R-BAR SQUARED	0.946
S.E.E.	0.011
DURBIN-WATSON	1.908
D.F.	39

Appendix H: S247 - HAEMORRHOIDECTOMY (SP)　　　FEE VARIABLE: FEEDUM

INDEPENDENT VARIABLE	DEPENDENT VARIABLE UTILP
SPPOP	-2.704 (-0.861) -0.768
BEDMSP	0.120 (3.256) ** 1.242
FEEDUM	0.011 (1.251)
T	-3.523E-03 (-3.812) ** -0.309
Q1	0.067 (8.021) **
Q2	0.062 (9.149) **
Q4	0.017 (2.514) **
CONSTANT	0.209 (0.640)
R-BAR SQUARED	0.953
S.E.E.	0.015
DURBIN-WATSON	1.979
D.F.	39

Appendix H: S287 - CHOLECYSTECTOMY (SP) FEE VARIABLE: FEEDUM

INDEPENDENT VARIABLE	DEPENDENT VARIABLE UTILP
SPPOP	-19.682 (-1.351) -1.297
BEDMSP	0.064 (0.245) 0.153
FEEDUM	0.053 (1.552)
T	-0.030 (-3.450) ** -0.615
T2	3.274E-04 (4.109) ** 0.233
Q1	0.180 (10.784) **
Q2	0.165 (10.309) **
Q4	0.091 (5.639) **
EBD	
CONSTANT	3.144 (1.755) *
R-BAR SQUARED	0.920
S.E.E.	0.043
DURBIN-WATSON	1.987
D.F.	38

Appendix H: S323 - HERNIOTOMY (SP) FEE VARIABLE: FEEDUM

INDEPENDENT VARIABLE	DEPENDENT VARIABLE
	UTILP@
SPPOP	
BEDMSP	-0.176 (-1.397) -1.079
FEEDUM	-0.011 (-0.480)
T	-1.115E-03 (-1.160) -0.069
Q1	0.115 (7.904) **
Q2	0.048 (3.462) **
Q4	0.057 (4.114) **
EBD	
CONSTANT	1.030 (2.452) **
R-BAR SQUARED	0.600
S.E.E.	0.033
DURBIN-WATSON	1.424
D.F.	34

Appendix H: S655 - ENDOSCOPY,TURP (SP) FEE VARIABLE: FEEDUM

INDEPENDENT VARIABLE	DEPENDENT VARIABLE UTILP
SPPOP	9.797 (1.069) 0.858
BEDMSP	0.230 (2.334) ** 0.736
FEEDUM	0.051 (2.183) **
T	7.815E-03 (2.927) ** 0.212
Q1	0.101 (8.900) **
Q2	0.074 (6.914) **
Q4	0.080 (7.339) **
CONSTANT	-0.886 (-0.979)
R-BAR SQUARED	0.835
S.E.E.	0.034
DURBIN-WATSON	2.056
D.F.	39

Appendix H: S754 - DIAGNOSTIC CURETTAGE (GP/FP) FEE VARIABLE: FEEDUM

	DEPENDENT VARIABLE
INDEPENDENT VARIABLE	UTILP
GPPOP	1.002 (2.211) ** 1.499
BEDMSOBP	0.027 (0.224) 0.165
URATE	-6.098E-03 (-1.464) -0.080
FEEDUM	-0.069 (-4.342) **
T	-0.019 (-6.676) ** -0.890
Q1	0.034 (2.002) *
Q2	0.054 (4.113) **
Q4	0.031 (2.409) **
CONSTANT	0.164 (0.539)
R-BAR SQUARED	0.982
S.E.E.	0.032
DURBIN-WATSON	1.886
D.F.	38

Appendix H: S754 - DIAGNOSTIC CURETTAGE (SP) FEE VARIABLE: FEEDUM

INDEPENDENT VARIABLE	DEPENDENT VARIABLE UTILP@	
SPPOP	-12.348	
	(-1.110)	
	-0.563	
BEDMSOBP	-0.712	
	(-1.925)	*
	-0.721	
URATE		
FEEDUM	0.172	
	(2.124)	**
T	-0.042	
	(-9.568)	**
	-0.324	
Q1	0.174	
	(4.175)	**
Q2	0.381	
	(9.580)	**
Q4	0.279	
	(6.999)	**
EBD	-0.192	
	(-2.289)	**
CONSTANT	8.746	
	(6.755)	**
R-BAR SQUARED	0.960	
S.E.E.	0.105	
DURBIN-WATSON	1.931	
D.F.	41	

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